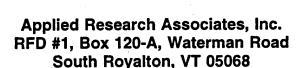
AIR FORCE SITE CHARACTERIZATION AND ANALYSIS PENETRO-METER SYSTEM (AFSCAPS): LASER-INDUCED FLUORESCENCE CONE PENETROMETER - ANALYTICAL TESTING DATA SHEETS (VOL V OF V - PART 2 OF 2)

James D. Shinn, Wesley L. Bratton



ENVIRONICS DIRECTORATE 139 Barnes Drive, Suite 2 Tyndall AFB FL 32403-5323

December 1994

Final Technical Report for Period March 1992 - November 1992

DTIC QUALITY INSPECTED 1

MAY 3 1 1995

G

9950530 033

Approved for public release; distribution unlimited.

AIR FORCE MATERIEL COMMAND TYNDALL AIR FORCE BASE, FLORIDA 32403-532<u>3</u>

NOTICES

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any employees, nor any of their contractors, subcontractors, or their employees, make any warranty, expressed or implied, or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency, contractor, or subcontractor thereof. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the United States Government or any agency, contractor, or subcontractor thereof.

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely Government-related procurement, the United States Government incurs no responsibility or any obligation whatsoever. The fact that the Government may have formulated or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication, or otherwise in any manner construed, as licensing the holder or nay other person or corporation; or as conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

The following commercial products (requiring Trademark®) are mentioned in this report. Because of the frequency of usage, the Trademark was not indicated. If it becomes necessary to reproduce any segment of this document containing any of these names, this notice must be included as part of that reproduction.

Silicon Graphics	Tektronix	TECHBASE
Continuum	Fiberguide	Telzel
Chromex	Torr-Seal	Teflon
Spex		

This technical report has been reviewed by the Public Affairs Office (PA) and is releasable to the National Technical Information Service (NTIS) where it will be available to the general public, including foreign nationals.

This report has been reviewed and is approved for publication.

BRUCE J. MIELSEN

Project Manager

ROBERT G. LAPOE, Lt. Col, USAF, BSC

Chief, Site Remediation Division

Michael & Zatone

MICHAEL G. KATONA, PhD

Chief Scientist, Environics Directorate

heil J. Lamb.
NEIL J. LAMB, Colonel, USAF, BSC

Director, Environics Directorate

SECURITY CLASSIFICATION OF THIS F	PAGE							
REF	PORT D	OCU	MENTATIO	N PAGE				Approved No. 0704-0188
1a. REPORT SECURITY CLASSIFICAT UNCLASSIFIED	TION			1b. RESTRICTIV	/E MARKINGS			
2a. SECURITY CLASSIFICATION AUTH 2b. DECLASSIFICATION / DOWNGRAD		DULE		3. DISTRIBUTIO Available for Distribution u		OF REPO	ORT	
4. PERFORMING ORGANIZATION REF	PORT NUME	BER(S)		AL/EQ-TE	ORGANIZATION R-1993-0009	Vol V	of V	
6a. NAME OF PERFORMING ORGANIA Applied Research Associates, Inc.	ZATION	1	FICE SYMBOL applicable) ARA		ONITORING ORGA I Engineering Su			
6c. ADDRESS (City, State, and ZIP Coo RFD #1, Box 120-A, Waterman Ro South Royalton, VT 05068				HQ AFCESA/	City, State, and ZIF RAVW orce Base, FL 32)1	
8a. NAME OF FUNDING / SPONSORIN ORGANIZATION	IG	(If	FICE SYMBOL applicable) QW	9. PROCUREME F08635-88-C	ENT INSTRUMENT	IDENTIF	ICATION	NUMBER
Armstrong Laboratory 8c. ADDRESS (City, State, and ZIP Coc	-to)		QN		FUNDING NUMB	ERS		
139 Barnes Drive, Sui Tyndall AFB FL 32403-	te 2			PROGRAM ELEMENT NO.	PROJECT NO.	TASK	10.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification Air Force Site Characterization and Volume V - Analytical Testing Da	d Analysis	Penetro Part 2 o	ometer System of 2) (Vol. V o	(AFSCAPS); Las f V)	er Induced Fluor	rescence	e Cone	Penetrometer,
12. PERSONAL AUTHOR(S) James D. Shinn, Wesley L. Brattor	1							
13a. TYPE OF REPORT	13b. TIME		ED TO Nov. '92	1	EPORT (Year, Mon	th, Day)	15. PA	GE COUNT
Final 16. SUPPLEMENTARY NOTATION	FROM IVI	ir. 92	10 Nov. 92	Decembe	er 1994		<u> </u>	
17. COSATI CODES FIELD GROUP	\$UB-GR	OUP	18. SUBJECTT fluoresce demonstra BTEX. fue	ERMS (Continue on nce, charact tion, cone p	reverse if necessa terization, penetromete	ny and ide devel r, soi	entify by opmer	block number) nt, roundwater,
19. ABSTRACT (Continue on reverse if A prototype Laser-Induced Flux Air Force Base (Tinker AFB), C spills. Applied Research Associ program for the Air Force using Penetrometer System (SCAPS) coupled with NDSU's tunable la LIF-CPT probe data output was visualization capabilities. Field program, 112 soundings at eigobtained with CPT or drilling contamination. This volume documents the ana 20. DISTRIBUTION / AVAILABILITY OF UNCLASSIFIED/UNLIMITED S S 22a. NAME OF RESPONSIBLE INDIVI	orescence Oklahoma lates, Inc. (g LIF-CPT) effort. I aser fluoring s linked to d testing a ght contain g technolo alytical tes FABSTRAC GAME AS RP	-Electras an in (ARA) (A	ify by block numbric Cone Penet annovative tech and the North conents develor components of To enable rapits real-time and er AFB was consisted us and tested us	trometer Test (Lanology for delination Dakota State United Depending of the system coolid, efficient and alysis system wonducted to evaluated. At soing analytical off-site laborated Landle 21. ABSTRACT SEUNCLASS	neating soil conniversity (NDS) Triservice Site on sisted of AR. It minimally invite the LIF-Celect locations, procedures to ory used during ECURITY CLASSIF IFIED	tamina U) cond Charac A's cond asive sisional in CPT pro soil aid confirm the dei ICATION 22c.	tion restucted terization terizat	sulting from fuel the development ion and Analysis etrometer system racterization, the ng and scientific buring the testing er samples were presence of fuel
Bruce Nielsen DD Form 1473, JUN 86		····	Previous edition	(904) 283-601 ns are obsolete.				ON OF THIS PAGE

(The reverse of this page is blank.) NCLASSIFIED

APPENDIX I

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM BLDG 3001 OUTFALL-EAST SOLDIER CREEK

P	ccesio	n For		
	NTIS DTIC Unanno Justific	TAB ounced	*	
	By Distrib	oution /		
-	-	Availability C	odes	
	Dist	Avail and Specia	l or	
	A-			



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: OSC-B01-SS1 @16'

Collected By:

Date & Time Taken:

09/25/92 1750

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Client: ARS1 Lab Sample Number: 221835 Received: 09/28/92

		03/20/32			
RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
ND	mg/kg	1500 10/05/92	5	EPA Method 420.1	WMB
DISTILLED		1730 10/02/92		EPA Method 420.1	KC
ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
32	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
ND	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
5.6	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
ND	mg/kg	1400 10/02/92	.05	EPA Method 7470	SY
3.3	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
2	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
4.1	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Digested 50/1		0845 10/02/92		EPA Method 7471	JHL
	ND DISTILLED ND 32 ND 5.6 ND 3.3 2 4.1 Digested 50/4	ND mg/kg DISTILLED mg/kg 32 mg/kg ND mg/kg 5.6 mg/kg ND mg/kg 3.3 mg/kg 2 mg/kg 4.1 mg/kg Digested 50/4	RESULTS UNITS ANALYZED ND mg/kg 1500 10/05/92 DISTILLED 1730 10/02/92 ND mg/kg 1136 10/15/92 32 mg/kg 1136 10/15/92 ND mg/kg 1136 10/15/92 5.6 mg/kg 1136 10/15/92 ND mg/kg 1400 10/02/92 3.3 mg/kg 1244 10/14/92 2 mg/kg 1136 10/15/92 4.1 mg/kg 1244 10/14/92 Digested 50/4 0730 10/08/92	RESULTS UNITS ANALYZED EQL ND mg/kg 1500 10/05/92 5 DISTILLED 1730 10/02/92 1 ND mg/kg 1136 10/15/92 1 32 mg/kg 1136 10/15/92 .1 ND mg/kg 1136 10/15/92 .1 5.6 mg/kg 1136 10/15/92 .2 ND mg/kg 1400 10/02/92 .05 3.3 mg/kg 1244 10/14/92 .6 2 mg/kg 1136 10/15/92 1 4.1 mg/kg 1244 10/14/92 .1 Digested 50/4 0730 10/08/92	RESULTS UNITS ANALYZED EQL METHOD DISTILLED 1730 10/05/92 5 EPA Method 420.1 ND mg/kg 1136 10/15/92 1 EPA Method 6010 32 mg/kg 1136 10/15/92 .1 EPA Method 6010 ND mg/kg 1136 10/15/92 .1 EPA Method 6010 5.6 mg/kg 1136 10/15/92 .2 EPA Method 6010 ND mg/kg 1400 10/02/92 .05 EPA Method 6010 ND mg/kg 1244 10/14/92 .6 EPA Method 6010 2 mg/kg 1136 10/15/92 1 EPA Method 6010 2 mg/kg 1244 10/14/92 .1 EPA Method 6010 4.1 mg/kg 1244 10/14/92 .1 EPA Method 6010 Digested 50/4 0730 10/08/92 EPA Method 3050 FL

Quality Assurance for the SET with Sample 221835

Sample #	Description	Result	Units	Dup/Std Value Spk Conc.	Percent	Time	Date	Ву
				Phenols				
	Blank	<.02	mg/l			1500	10/05/92	WMB
	Standard	.050	mg/l	.050	100	1500	10/05/92	WMB
222287	Duplicate	.02	mg/l	.02	100	1500	10/05/92	WMB
				Total Arsenic				
	Blank	<.1	mg/l			1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

221835 Continued

Page 2

Sample #	Description	Result	Units	Dup/Std Value	Snk Cone	Dorsest	. .	-	
	Blank	<.1	mg/l	papysta vatue	spk conc.	Percent	Time	Date	Ву
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	.99	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	2.0	mg/l	2.0		101	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.7	mg/l	.6		110	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		115	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		110	1136	10/15/92	RJC
221715	Duplicate	1	mg/kg	1		100	1136	10/15/92	RJC
221855	Duplicate	5	mg/kg	3		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	5		150	1136	10/15/92	RJC
222319	Spike		mg/l	•	2.0	100	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	109	1136	10/15/92	RJC
221864	Spike		mg/l			93	1136	10/15/92	RJC
221715	Spike		mg/l		2.0 5.0	109	1136	10/15/92	RJC
	•		mg/ t	Total B		89	1136	10/15/92	RJC
	Blank	.02	mg/l	TOTAL D	ar rum				
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		400	1136	10/15/92	RJC
	Standard	5.1	mg/l	5.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		102	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		116	1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	10	mg/l	10		105	1136	10/15/92	RJC
	Standard	1.0	mg/t	1.0		100	1136	10/15/92	RJC
221715	Duplicate	580	mg/kg	560		100	1136	10/15/92	RJC
221855	Duplicate	200	mg/kg	180		104	1136	10/15/92	RJC
221864	Duplicate	22	mg/kg	20		111	1136	10/15/92	RJC
221864	Spike		mg/kg	20	2.0	110	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	91	1136	10/15/92	RJC
221855	Spike		mg/l		5.0	110	1136	10/15/92	RJC
			mg/ t	Total Cad	2.0	98	1136	10/15/92	RJC
	Blank	<.01	mg/l	TOTAL CA	ımıum				
	Blank	<.01					1136	10/15/92	RJC
	Standard	.53	mg/l mg/l	EO			1136	10/15/92	RJC
	Standard	2.2	mg/l	.50		106	1136	10/15/92	RJC
	Standard	2.6		2.0		110	1136	10/15/92	RJC
	Standard	.53	mg/l	2.5		104	1136	10/15/92	RJC
	Standard	1.7	mg/l mg/l	.50		106	1136	10/15/92	RJC
	Standard	.54		2.0		116	1136	10/15/92	RJC
	Standard	.52	mg/l	.50		108	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	.50		104	1136	10/15/92	RJC
221715	Duplicate	3	mg/l	ND Z		100	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	3		100	1136	10/15/92	RJC
		-	mg/kg	2		100	1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

11/05/92

221835 Continued

Page 3

221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Blank Stand	<.0 <.0 <.0 <.0 .o dard 2.2 lard 1.0 lard 1.8 lard 1.0 lard 1.1 lard 1.0 cate .02 cate .01 cate .02 cate .02 cate .03 cate .04	mg/l mg/l mg/l mg/l 2 mg/l 2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	3.0 Total Ch. 2.0 5.0 1.0 2.0 1.0 .10 1.0 .02 15 7	2.0 2.0 2.0 2.0 romium	110 96 91 89 104 110 106 100 111 100 100 131	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJ(RJ(RJ(RJ(RJ(RJ(RJ(RJ(RJ(
221855 Spike 221864 Spike 221715 Spike Blank Blank Stand St	<.0 <.0 <.0	mg/l mg/l mg/l 2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	2.0 5.0 1.0 2.0 1.0 .10 1.0 .02	2.0 2.0 2.0	91 89 104 110 106 100 111 100 110 100 131	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJ RJ RJ RJ RJ RJ RJ RJ RJ
221864 Spike Blank Blank Stand Stan	<.0 <.0 <.0	mg/l mg/l 2 mg/l 2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	2.0 5.0 1.0 2.0 1.0 .10 1.0 .02	2.0 2.0	89 104 110 106 100 111 100 110 100 131	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJI RJI RJI RJI RJI RJI RJI RJI
221715 Spike Blank Blank Stand Stan	<.0 <.0 <.0	mg/l 2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	2.0 5.0 1.0 2.0 1.0 .10 1.0 .02	2.0	110 106 100 111 100 110 100 131	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJ(RJ(RJ(RJ(RJ(RJ(RJ(RJ(
### Blank ### Blank ### Blank ### Stand ### Spike ### Sp	<.0 <.0 <.0	2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	2.0 5.0 1.0 2.0 1.0 .10 1.0 .02		110 106 100 111 100 110 100 100	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJ(RJ(RJ(RJ(RJ(RJ(RJ(RJ(
### Blank Stand	<.0 lard 2.2 lard 5.3 lard 1.0 lard 1.1 lard 1.0 cate .02 cate 11 cate 8 cate 14	2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	2.0 5.0 1.0 2.0 1.0 .10 1.0 .02	romium	106 100 111 100 110 100 100	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC RJC RJC RJC
### Blank Stand	<.0 lard 2.2 lard 5.3 lard 1.0 lard 1.8 lard 1.0 lard 1.1 lard 1.0 cate .02 cate 11 cate 8 cate 14	2 mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	5.0 1.0 2.0 1.0 .10 1.0 .02 15		106 100 111 100 110 100 100	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC
Stand	lard 2.2 lard 5.3 lard 1.0 lard 1.8 lard 1.0 lard .11 lard .02 cate .02 cate 8 cate 14	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	5.0 1.0 2.0 1.0 .10 1.0 .02 15		106 100 111 100 110 100 100	1136 1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC RJC RJC RJC
Stand	lard 5.3 lard 1.0 lard 1.8 lard 1.0 lard .11 lard .02 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/l mg/l mg/l mg/kg mg/kg mg/kg	5.0 1.0 2.0 1.0 .10 1.0 .02 15		106 100 111 100 110 100 100	1136 1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC RJC RJC
Stand	lard 1.0 lard 1.8 lard 1.0 lard .11 lard 1.0 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/l mg/l mg/l mg/kg mg/kg mg/kg	1.0 2.0 1.0 .10 1.0 .02 15		100 111 100 110 100 100	1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC RJC
Stand Stand Stand Stand Stand Stand Stand Stand Stand 222319 Dupli 221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Stand Stan	lard 1.8 lard 1.0 lard .11 lard 1.0 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/l mg/l mg/kg mg/kg mg/kg	2.0 1.0 .10 1.0 .02 15 7		111 100 110 100 100 131	1136 1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC
Stand Stand Stand Stand 222319 Dupli 221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Stand Stan	lard 1.0 lard .11 lard 1.0 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/l mg/kg mg/kg mg/kg mg/k	1.0 .10 1.0 .02 15		100 110 100 100 131	1136 1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC
Stand Stand 222319 Dupli 221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike 221715 Spike 21864 Spike 221715 Spike 221715 Spike Stand S	ard .11 lard 1.0 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/l mg/kg mg/kg mg/kg	.10 1.0 .02 15 7		110 100 100 131	1136 1136 1136 1136	10/15/92 10/15/92 10/15/92 10/15/92	RJC RJC RJC RJC
Stand 222319 Dupli 221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike 221715 Spike Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike	ard 1.0 cate .02 cate 11 cate 8 cate 14	mg/l mg/l mg/kg mg/kg mg/kg mg/l	1.0 .02 15 7		100 100 131	1136 1136 1136	10/15/92 10/15/92 10/15/92	RJC RJC
222319 Dupli 221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Blank Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike	cate .02 cate 11 cate 8 cate 14	mg/l mg/kg mg/kg mg/kg mg/l	.02 15 7		100 131	1136 1136	10/15/92 10/15/92	RJC
221715 Dupli 221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Blank Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike Blank Blank	cate 11 cate 8 cate 14	mg/kg mg/kg mg/kg mg/l	15 7		131	1136	10/15/92	
221855 Dupli 221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Blank Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike	cate 8 cate 14	mg/kg mg/kg mg/l	7					RJC
221864 Dupli 222319 Spike 221855 Spike 221864 Spike 221715 Spike Blank Stand	cate 14	mg/kg mg/l			113	1174		
222319 Spike 221855 Spike 221864 Spike 221715 Spike 221715 Spike Blank Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike		mg/l	12				10/15/92	RJC
221855 Spike 221864 Spike 221715 Spike Blank Stand St					115	1136	10/15/92	RJC
221864 Spike 221715 Spike Blank Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike		m=/!		2.0	99	1136	10/15/92	RJC
221715 Spike Blank Stand Stan				2.0	94	1136	10/15/92	RJC
Blank Stand Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike Blank		mg/l		2.0	92	1136	10/15/92	RJC
Stand		mg/l		5.0	92	1136	10/15/92	RJC
Stand			Total Me	rcury				
Stand Stand Stand Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike						1400	10/02/92	SY
Stand Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike		-	.025		104	1400	10/02/92	SY
Stand Stand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike		-	.010		100	1400	10/02/92	SY
\$tand 220412 Dupli 220803 Dupli 220412 Spike 220803 Spike		-	.010		100	1400	10/02/92	SY
220412 Dupli 220803 Dupli 220412 Spike 220803 Spike	-	•	.010		111	1400	10/02/92	SY
220803 Dupli 220412 Spike 220803 Spike		=	.010		100	1400	10/02/92	SY
220412 Spike 220803 Spike Blank		mg/kg	ND		100	1400	10/02/92	SY
220803 Spike		mg/kg	ND		100	1400	10/02/92	SY
Blank		mg/l		.010	64	1400	10/02/92	34
		mg/l	makal M	.010	99	1400	10/02/92	SY
	. •		Total N	ickel				
		-				1244	10/14/92	RJC
Blank		_				1244	10/14/92	RJC
Stand			.40		100	1244	10/14/92	RJC
Stand			2.0		105	1244	10/14/92	RJC
Stand			5.0		104	1244	10/14/92	RJC
Stand		mg/l	2.0		111	1244	10/14/92	RJC
Stand		mg/l	1.0		100	1244	10/14/92	RJC
Stand		mg/l	5.0		104	1244	10/14/92	RJC
Stand		mg/l	10		100	1244	10/14/92	RJC
Stand 222319 Dupli	ard 10	mg/l mg/l	5.0 ND		110 100	1244 1244	10/14/92 10/14/92	RJC RJC



Analytical Chemistry • Utility Operations

11/05/92 221835 Continued

Page 4

								• -	
Sample #	Description	Result	Units	Dup/Std Valu	S=1- O	_			
221715	Duplicate	8.4	mg/kg	9.1	e spk conc.	Percent	Time	Date	By
221855	Duplicate	4.6	mg/kg	4.0		108	1244	10/14/92	RJC
222319	Spike		mg/l	4.0	2.0	114	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	99	1244	10/14/92	RJC
221855	Spike		mg/l		2.0 2.0	88	1244	10/14/92	RJC
				Total		92	1244	10/14/92	RJC
	Blank	<.1	mg/l	IOCAI	read				
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		105	1136	10/15/92	RJC
	Standard	1.1	mg/l			104	1136	10/15/92	RJC
	Standard	1.8	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	1.1	mg/l	2.0		111	1136	10/15/92	RJC
	Standard	.62	_	1.0		110	1136	10/15/92	RJC
	Standard	1.0	mg/l	.60		103	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/l	ND		100	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	4		122	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	2		100	1136	10/15/92	RJC
222319	Spike	,	mg/kg	4		122	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	95	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	93	1136	10/15/92	RJC
			mg/l	m-4-3	5.0	89	1136	10/15/92	RJC
	Blank	<.01		Total	Zinc				
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l				1244	10/14/92	RJC
	Standard		mg/l	.20		105	1244	10/14/92	RJC
	Standard	2.0	mg/l	2.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.1	mg/l	1.0		110	1244	10/14/92	RJC
	Standard	5.3	mg/l	5.0		106	1244	10/14/92	RJC
222319	Duplicate	10	mg/l	10		100	1244	10/14/92	RJC
221715	Duplicate	.80	mg/l	.77		104	1244	10/14/92	RJC
221855	Duplicate	14	mg/kg	16		113	1244	10/14/92	RJC
222319	Spike	7.3	mg/kg	5.9		121	1244	10/14/92	RJC
221715	•		mg/l		2.0	95	1244	10/14/92	RJC
21855	Spike Spike		mg/l		2.0	93	1244	10/14/92	RJC
033	Spike		mg/l		2.0	95	1244	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D. President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OSC-B02-SS1 @11'

Collected By: JPJ

Date & Time Taken:

09/25/92

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 221836 Received: 09/28/92

Client: ARS1

			,, 52		Client:	AKSI
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Phenols	ND	mg/kg	1500 10/05/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2030 10/02/92		EPA Method 420.1	KC
Total Arsenic	4	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	170	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	5	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	21	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1400 10/02/92	.05	EPA Method 7470	SY
Total Nickel	14	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	5	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	21	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		0845 10/02/92		EPA Method 7471	JHL

Quality Assurance for the SET with Sample 221836

Sample #	Description	Result	Units	• • • • • • • • • • • • • • • • • • • •	• • • • • • •	• • • • • • •	• • • • • • • • • •	• • • • • •
		NC3U(Onits	Dup/Std Value Spk Conc.	Percent	Time	Date	Ву
				Phenols				Бу
	Blank	<.02	mg/l			4500	44.45.44	
	Standard	.050	mg/l	050		1500	10/05/92	WMB
222287	Dumliant		-	.050	100	1500	10/05/92	WMB
	Duplicate	.02	mg/l	.02	100	1500	10/05/92	
				Total Arsenic		1300	10/03/92	WMB
	Blank	<.1	mg/l					
			97 .			1136	10/15/ 9 2	RJC



Analytical Chemistry • Utility Operations

11/05/92

221836 Continued

Page 2

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	By
	Blank	<.1	mg/l				1136	10/15/92	RJ
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJ
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJ
	Standard	.99	mg/l	1.0		101	1136	10/15/92	RJ(
	Standard	2.0	mg/l	2.0		100	1136	10/15/92	RJ
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJO
	Standard	.7	mg/l	.6		115	1136	10/15/92	RJO
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJO
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJO
221715	Duplicate	1	mg/kg	1		100	1136	10/15/92	RJO
221855	Duplicate	5	mg/kg	3		150	1136	10/15/92	RJO
221864	Duplicate	5	mg/kg	5		100	1136	10/15/92	RJO
222319	Spike		mg/l		2.0	109	1136	10/15/92	RJO
221855	Spike		mg/l		2.0	93	1136	10/15/92	RJO
221864	Spike		mg/l		2.0	109	1136	10/15/92	RJO
221715	Spike		mg/l		5.0	89	1136	10/15/92	RJO
	'			Total B					
	Blank	.02	mg/l				1136	10/15/92	RJO
	Blank	<.01	mg/l				1136	10/15/92	RJO
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJO
	Standard	5.1	mg/l	5.0		102	1136	10/15/92	RJO
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJ(
	Standard	1.7	mg/l	2.0		116	1136	10/15/92	RJO
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJO
	Standard	2.1	mg/l	2.0		105	1136	10/15/92	RJ(
	Standard	10	mg/l	10		100	1136	10/15/92	RJO
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJO
221715	Duplicate	580	mg/kg	560		104	1136	10/15/92	RJO
221855	Duplicate	200	mg/kg	180		111	1136	10/15/92	RJ
221864	Duplicate	22	mg/kg	20		110	1136	10/15/92	RJ
221864	Spike		mg/t	20	2.0	91	1136	10/15/92	RJ
221715	Spike		mg/l		5.0	110	1136	10/15/92	RJ
221855	Spike		mg/l		2.0	98	1136	10/15/92	RJ
22 (0))	opino		mg/ t	Total Ca		,0	, 150	.0, .2, .2	
	Blank	<.01	mg/l				1136	10/15/92	RJO
	Blank	<.01	mg/l				1136	10/15/92	RJ(
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJ
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJ
	Standard	2.6	mg/l	2.5		104	1136	10/15/92	RJ
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJ
	Standard	1.7	mg/l	2.0		116	1136	10/15/92	RJ
	Standard	.54	mg/l	.50		108	1136	10/15/92	RJ
	Standard	.52	mg/l	.50		104	1136	10/15/92	RJ(
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJ
221715	Duplicate	3	mg/kg	3		100	1136	10/15/92	RJ



Analytical Chemistry • Utility Operations

11/05/92

221836 Continued

Page 3

								rage 3	
Sample #	Description	n Result	Units	Dum/ond vol.					
221864	Duplicate	3.3	mg/kg	Dup/Std Value 3.0	Spk Conc.	Percent	Time	Date	Ву
222319	Spike		mg/l	3.0		110	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	96	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	91	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	89	1136	10/15/92	RJC
	,		HIG/ L	Matal av	2.0	104	1136	10/15/92	RJC
	Blank	<.02	ma / l	Total Ch	romium				
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0			1136	10/15/92	RJC
	Standard	5.3	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	1.0	mg/l	5.0		106	1136	10/15/92	RJC
	Standard	1.8	mg/t	1.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	2.0		111	1136	10/15/92	RJC
	Standard		mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.11	mg/l	.10		110	1136	10/15/92	
222319	Duplicate	1.0	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	.02	mg/l	.02		100	1136	10/15/92	RJC
221855	Duplicate	11	mg/kg	15		131	1136	10/15/92	RJC
221864	Duplicate	8	mg/kg	7		113	1136	10/15/92	RJC
222319		14	mg/kg	12		115	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	99	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	94	1136		RJC
221715	Spike		mg/l		2.0	92	1136	10/15/92	RJC
221713	Spike		mg/l		5.0	92	1136	10/15/92	RJC
	D. .			Total Mer	cury		1130	10/15/92	RJC
	Blank	.001	mg/l		_		1400	10 (02 (02	
	Standard	.026	mg/l	.025		104	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	-009	mg/l	.010		111		10/02/92	SY
220412	Standard	.010	mg/l	.010		100	1400 1400	10/02/92	SY
	Duplicate	ND	mg/kg	ND		100		10/02/92	SY
220803	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	SY
220412	Spike		mg/l		.010	64	1400	10/02/92	SY
220803	Spike		mg/l		.010	99	1400	10/02/92	SY
				Total Nic	ckel	**	1400	10/02/92	SY
	Blank	<.05	mg/l				401.		
	Blank	<.05	mg/l				1244	10/14/92	RJC
	Standard	.40	mg/l	.40		100	1244	10/14/92	RJC
	Standard	2.1	mg/l	2.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		105	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		104	1244	10/14/92	RJC
	Standard	1.0	mg/l	1.0		111	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		100	1244	10/14/92	RJC
	Standard	10	mg/l	10		104	1244	10/14/92	RJC
	Standard	5.5	mg/l	5.0		100	1244	10/14/92	RJC
222319	Duplicate	ND	mg/l	ND		110	1244	10/14/92	RJC
				nu		100	1244	10/14/92	RJC



Analytical Chemistry • Utility Operations

11/05/92

221836 Continued

Page 4

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
221715	Duplicate	8.4	mg/kg	9.1	-1	108	1244	10/14/92	RJ(
221855	Duplicate	4.6	mg/kg	4.0		114	1244	10/14/92	RJ(
222319	Spike		mg/l		2.0	99	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	88	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	92	1244	10/14/92	RJC
				Total	Lead			10, 14, 72	KJC
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		105	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		104	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		111	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	.62	mg/l	.60		103	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/kg	4		122	1136	10/15/92	RJC
221855	Duplicate	2	mg/kg	2		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	4		122	1136	10/15/92	RJC
222319	Spike		mg/l		2.0	95	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	93	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	89	1136	10/15/92	
			•	Total :		0,	1130	10/13/92	RJC
	Blank	<.01	mg/l				1244	10/14/92	RJC
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l	.20		105	1244	10/14/92	RJC
	Standard	2.0	mg/l	2.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	
	Standard	1.1	mg/l	1.0		110	1244	10/14/92	RJC RJC
	Standard	5.3	mg/l	5.0		106	1244	10/14/92	
	Standard	10	mg/l	10		100	1244	10/14/92	RJC
222319	Duplicate	.80	mg/l	.77		104	1244		RJC
221715	Duplicate	14	mg/kg	16		113	1244	10/14/92	RJC
221855	Duplicate	7.3	mg/kg	5.9		121	1244	10/14/92	RJC
222319	Spike		mg/l		2.0	95	1244	10/14/92	RJC
221715	Spike		mg/l		2.0	93 93	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	95 95	1244	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OSC-G01 0.1'-0.5' Outfall

Collected By:

09/26/92 1200

Date & Time Taken:

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 221837

Received: 09/28/92

	221037	kecelved:	09/28/92		Client:	ARC1
PARAMETER Phenols	RESULTS ND	UNITS mg/kg	ANALYZED 1500 10/05/92	EQL	METHOD	BY
Phenol Distillation	DISTILLED			5	EPA Method 420.1	WMB
Total Arsenic			2030 10/02/92		EPA Method 420.1	KC
	2	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	500	mg/kg	1136 10/15/92	.1	EPA Method 6010	
Total Cadmium	390	mg/kg	1136 10/15/92			RJC
Total Chromium	800	me the		.1	EPA Method 6010	RJC
Total Mercury		mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
·	.4	mg/kg	1400 10/02/92	.05	EPA Method 7470	SY
Total Nickel	300	mg/kg	1244 10/14/92	.6	EPA Method 6010	
Total Lead	320	mg/kg			ELY WELLIOD POID	RJC
Total Zinc	340	•	1136 10/15/92	1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl		mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
	Digested 50/4		0730 10/08/92		EPA Method 3050 FL	
Metals Digestion - 7471	Digested 50/1		0845 10/02/92			JHL
Ouali	tv Assurance		12 10/02/72		EPA Method 7471	JHL

Quality Assurance for the SET with Sample 221837

Sample #		• • • • • •	• • • • • •	the SET With	Sample	221837		
p (C #	Description Blank	Result	Units	Dup/Std Value Spk Conc. Phenols	Percent	Time	Date	Ву
222287	Standard Duplicate	.050	mg/l mg/l mg/l	.050	100	1500 1500	10/05/92 10/05/92	WMB
	Blank	<.1	mg/l	Total Arsenic	100	1500	10/05/92	WMB
						1136	10/15/92	RJC



Analytical Chemistry • Utility Operations

221837 Continued

Page 2

								Page 2	
Sample #	Description	n Result	: Units	Dup/Std Va	luo Sak Saa				
	Blank	<.1	mg/i	papyold 49	lue Spk Conc.	Percent	Time	Date	Ву
	Standard	1.0	mg/l	1.0		400	1136	10/15/92	RJC
	Standard	2.2	mg/i	2.0		100	1136	10/15/92	RJC
	Standard	.99	mg/l	1.0		110	1136	10/15/92	RJC
	Standard	2.0	mg/l	2.0		101	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.7	mg/i	.6		110	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		115	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	ND		110	1136	10/15/92	RJC
221715	Duplicate	1	mg/kg	1		100	1136	10/15/92	RJC
221855	Duplicate	5	mg/kg	3		100	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	5 .		150	1136	10/15/92	RJC
222319	Spike		mg/l	•	2.0	100	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	109	1136	10/15/92	RJC
221864	Spike		mg/t		2.0	93	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	109	1136	10/15/92	RJC
			mg/ t	Moto 1	5.0	89	1136	10/15/92	RJC
	Blank	.02	mg/l	Total	Barlum				
	Blank	<.01	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	5.1	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	5.0		102	1136	10/15/92	RJC
	Standard	1.7	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.0	mg/l	2.0		116	1136	10/15/92	RJC
	Standard	2.1		1.0		100	1136	10/15/92	RJC
	Standard	10	mg/l	2.0		105	1136	10/15/92	RJC
	Standard	1.0	mg/l	10		100	1136	10/15/92	RJC
221715	Duplicate	580	mg/l	1.0		100	1136	10/15/92	RJC
221855	Duplicate	200	mg/kg	560		104	1136	10/15/92	RJC
221864	Duplicate	22	mg/kg	180		111	1136	10/15/92	RJC
221864	Spike		mg/kg	20		110	1136	10/15/92	RJC
21715	Spike		mg/l		2.0	91	1136	10/15/92	
21855	Spike		mg/l		5.0	110	1136	10/15/92	RJC
	opc		mg/l		2.0	98	1136	10/15/92	RJC
	Blank	- 01		Total Ca	dmium			10) 13)) _	RJC
	Blank	<.01	mg/l				1136	10/15/92	D.10
	Standard	<.01	mg/l				1136	10/15/92	RJC
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	2.6	mg/l	2.5		104	1136	10/15/92	RJC
	Standard	.53	mg/l	.50		106	1136	10/15/92	RJC
	Standard	1.7	mg/l	2.0		116	1136		RJC
		.54	mg/t	.50		108	1136	10/15/92	RJC
2319	Standard Duplicate	.52	mg/l	.50		104	1136	10/15/92	RJC
1715		ND	mg/l	ND		100	1136	10/15/92	RJC
1855	Duplicate	3	mg/kg	3		100	1136	10/15/92	RJC
· ·	Duplicate	2	mg/kg	2		100	1136	10/15/92 10/15/92	RJC RJC



Analytical Chemistry • Utility Operations

11/05/92

221837 Continued

Page 3

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	D.
221864	Duplicate	3.3	mg/kg	3.0		110	1136	10/15/92	By RJC
222319	Spike		mg/l		2.0	96	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	91	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	89	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	104	1136	10/15/92	RJC
				Total Ch			, ,50	107 137 72	Kuc
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Blank	<.02	mg/l				1136	10/15/92	RJC
	Standard	2.2	mg/l	2.0		110	1136	10/15/92	RJC
	Standard	5.3	mg/l	5.0		106	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	1.8	mg/l	2.0		111	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
	Standard	.11	mg/l	.10		110	1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0		100	1136	10/15/92	RJC
222319	Duplicate	.02	mg/l	.02		100	1136	10/15/92	RJC
221715	Duplicate	11	mg/kg	15		131	1136	10/15/92	RJC
221855	Duplicate	8	mg/kg	7		113	1136	10/15/92	RJC
221864	Duplicate	14	mg/kg	12		115	1136	10/15/92	RJC
222319	Spike		mg/l		2.0	99	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	94	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	92	1136	10/15/92	RJC
221715	Spike		mg/l		5.0	92	1136	10/15/92	RJC
				Total Me	rcury				
	Blank	.001	mg/l				1400	10/02/92	SY
	Standard	.026	mg/l	.025		104	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
	Standard	.009	mg/l	.010		111	1400	10/02/92	SY
220/42	Standard	.010	mg/l	.010		100	1400	10/02/92	SY
220412	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	SY
220803	Duplicate	ND	mg/kg	ND		100	1400	10/02/92	SY
220412	Spike		mg/l		.010	64	1400	10/02/92	SY
220803	Spike		mg/l		.010	99	1400	10/02/92	SY
	DII			Total N	ickel				
	Blank	<.05	mg/l				1244	10/14/92	RJC
	Blank	<.05	mg/l				1244	10/14/92	RJC
	Standard	.40	mg/l	.40		100	1244	10/14/92	RJC
	Standard	2.1	mg/l	2.0		105	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.0	mg/l	1.0		100	1244	10/14/92	RJC
	Standard	5.2	mg/l	5.0		104	1244	10/14/92	RJC
	Standard	10	mg/l	10		100	1244	10/14/92	RJC
222319	Standard	5.5	mg/l	5.0		110	1244	10/14/92	RJC
	Duplicate	ND	mg/l	ND		100	1244	10/14/92	RJC



Analytical Chemistry • Utility Operations

11/05/92

221837 Continued

Page 4

	· · · · · · · · · · · · · · · · · · ·								
Sample #	Description	Result	Units	Dup/Std Valu	o C=1. C				
221715	Duplicate	8.4	mg/kg	9.1	e spk conc.	Percent	Time	Date	Ву
221855	Duplicate	4.6	mg/kg	4.0		108	1244	10/14/92	RJO
222319	Spike		mg/l	4.0	2.0	114	1244	10/14/92	RJO
221715	Spike		mg/l		2.0	99	1244	10/14/92	RJC
221855	Spike		mg/l		2.0	88	1244	10/14/92	RJC
				Total	2.0 Tond	92	1244	10/14/92	RJC
	Blank	<.1	mg/l	10141	nead				
	Blank	<.1	mg/l				1136	10/15/92	RJC
	Standard	1.0	mg/l	1.0			1136	10/15/92	RJC
	Standard	2.1	mg/l	2.0		100	1136	10/15/92	RJC
	Standard	5.2	mg/l	5.0		105	1136	10/15/92	RJC
	Standard	1.1	mg/l	1.0		104	1136	10/15/92	RJC
	Standard	1.8	mg/l			110	1136	10/15/92	RJC
	Standard	1.1	mg/l	2.0 1.0		111	1136	10/15/92	RJC
	Standard	-62	mg/l			110	1136	10/15/92	RJC
	Standard	1.0	mg/l	.60		103	1136	10/15/92	RJC
222319	Duplicate	ND	mg/l	1.0		100	1136	10/15/92	RJC
221715	Duplicate	5	mg/t mg/kg	ND		100	1136	10/15/92	RJC
221855	Duplicate	2		4		122	1136	10/15/92	RJC
221864	Duplicate	5	mg/kg	2		100	1136	10/15/92	RJC
222319	Spike	•	mg/kg	4		122	1136	10/15/92	RJC
221855	Spike		mg/l		2.0	95	1136	10/15/92	RJC
221864	Spike		mg/l		2.0	90	1136	10/15/92	RJC
221715	Spike		mg/l		2.0	93	1136	10/15/92	RJC
	77.113		mg/l		5.0	89	1136	10/15/92	RJC
	Blank	<.01	- 41	Total :	Zinc			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	KJC
	Blank	.02	mg/l				1244	10/14/92	RJC
	Standard	.21	mg/l				1244	10/14/92	RJC
	Standard	2.0	mg/l	.20		105	1244	10/14/92	RJC
	Standard	5.2	mg/l	2.0		100	1244	10/14/92	RJC
	Standard		mg/l	5.0		104	1244	10/14/92	
	Standard	1.8	mg/l	2.0		111	1244	10/14/92	RJC
	Standard	1.1	mg/l	1.0		110	1244	10/14/92	RJC
	Standard	5.3	mg/i	5.0		106	1244	10/14/92	RJC
222319	Duplicate	10	mg/l	10		100	1244	10/14/92	RJC
221715	· ·	.80	mg/l	.77		104	1244	10/14/92	RJC
221855	Duplicate Duplicate	14	mg/kg	16		113	1244	10/14/92	RJC
222319		7.3	mg/kg	5.9		121	1244		RJC
221715	Spike Spike		mg/l		2.0	95	1244	10/14/92 10/14/92	RJC
221855	Spike Spike		mg/l		2.0	93	1244		RJC
	Spike		mg/l		2.0	95	1244	10/14/92	RJC
							1644	10/14/92	RJC

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

วกว

(The reverse of this page is blank.)

APPENDIX J

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM LANDFILL NO. 2



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-05-SS1/SS2 5-8.6' Comp

Collected By: Date & Time Taken:

JPJ

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

and sample Numbe	- Unpreserved Plas r: 222693	Received	: 10/07/92		Client: A	RS1
PARAMETER	RESULTS	IINTEG				
Total Sonic Extraction	30->1	UNITS g->mi	ANALYZED	EQL	METHOD	BY
		g->m(1550 10/13/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	
Phenols	ND	mg/kg			ברא אפנווטע בככל אוטטי	JT
		mg/ kg	1700 10/14/92	5	EPA Method 420.1	₩MB
Phenol Distillation	DISTILLED		1800 10/13/92		EDA Mark at 700 4	
Total Arsenic					EPA Method 420.1	CRH
	11	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	790	mg/kg	0070 44 45			
		11197 Kg	0938 11/05/92	.1	EPA Method 6010	GDG
fotal Cadmium	77	mg/kg	0938 11/05/92	.1	EDA W	
otal Chromium	_		(1, 03, 72	• 1	EPA Method 6010	GDG
on on one	73	mg/kg	0938 11/05/92	.2	EPA Method 6010	cnc
otal Mercury	.09					GDG
	••,	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
otal Nickel	71	mg/kg	0039 11/05/00			
otal Lead			0938 11/05/92	.6	EPA Method 6010	GDG
Stat Fead	1400	mg/kg	0938 11/05/92	1	EDA Mark I (DAG	
ital Zinc	4000			•	EPA Method 6010	GDG
	1900	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
tals Digestion - 3050 Fl	Digested 50/4					apa
	311111 20,4		0830 10/26/92		EPA Method 3050 Fl	JHL
tals Digestion - 7471	Digested 50/1		1600 10/14/92			
enaphthene			1000 107 147 92		EPA Method 7471	BWP
- April Citation	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
enaph thy lene	ND				בו א אבנווסם מבויט	PM
		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
rolein	ND	ug/kg	113/ 11/0//02			
			1134 11/04/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222693 Continued

			-u		Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED	707		
Acrylonitrile	ND	ug/kg	1134 11/04/92	EQL 100	METHOD EPA Method 8240	BY PM
Aldrin	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	60
Anthracene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Benzene	ND	ug/kg	1134 11/04/92	5.0		PM
Benzidine	ND	ug/kg			EPA Method 8240	PM
Benzo(a)anthracene	ND		1341 11/03/92	330	EPA Method 8270	PM
Benzo(a)pyrene		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Bis(2-chloroethyl)ether	ND	ug/kg	1341 11/03/92	330		PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1341 11/03/92		EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg		330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND		1341 11/03/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	P M
4-Chlorophenyl phenyl ether	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Carbon Tetrachloride	ND	ug/kg	1134 11/04/92			PM
hlorobenzene	ND	ug/kg		5.0	EPA Method 8240	PM
hloroethane	ND		1134 11/04/92	5.0	EPA Method 8240	PM
-Chloroethylvinyl ether		ug/kg	1134 11/04/92	10	EPA Method 8240	PM
hloroform	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	PM
	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222693 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
Chloromethane	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	BY
2 (6)		. .		10	EFA MELHOD 0240	PM
2-Chloronaphthalene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PN
1,3-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	2M
1,2-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1341 11/03/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1134 11/04/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Diethyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	. 1341 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222693 Continued

			Ju		Page 4	
PARAMETER	RESULTS	UNITS	ANALYZED			
Ethyl benzene	ND	ug/kg	1134 11/04/92	- = -	METHOD	BY
Fluoranthene			1134 11704792	5.0	EPA Method 8240	PM
, tas, arrenerie	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	DM.
Fluorene	ND				Nethod 6270	PM
		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1341 11/03/92	•••		
Hexachlorobutadiene		J. Q	1341 11/03/92	330	EPA Method 8270	PM
nexactivo obditad ene	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
Hexachlorocyclopentadiene	ND				EFA MELIIOQ 6270	PM
	NU	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	47/4 44			7.41
Indexed 2 P		49/ 49	1341 11/03/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1341 11/03/92	330	FB4 W	
Isophorone				330	EPA Method 8270	PM
,	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Methylene Chloride	ND	un the				P.M
		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1341 11/03/92	770		
Nitrobenzene			1341 11/03/92	330	EPA Method 8270	PM
one income	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	
N-nitrosodimethylamine	ND				ETA MECHOO 6270	PM
		ug/kg	1341 11/03/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1341 11/03/92			
N-nitrosodiphenylamine		23, 113	1341 11/03/92	330	EPA Method 8270	PM
The osodiphenylamine	ND	ug/kg	1341 11/03/92	330	EDA Mother 0270	
Phenanthrene	MD			330	EPA Method 8270	PM
	ND	ug/kg	1341 11/03/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	4744 44			r ra
1 1 2 2		49/ Kg	1341 11/03/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1134 11/04/92	5.0	50. W	
Tetrachloroethene			11704772	5.0	EPA Method 8240	PM
and a councile	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
foluene	ND	ton the -				rm.
		ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
,2,4-Trichlorobenzene	ND	ug/kg	1341 11/03/92	770	_	
,1,1-Trichloroethane			1341 11/03/92	330	EPA Method 8270	PM
, , , rentor bethane	ND	ug/kg	1134 11/04/92	5.0	EPA Method 8240	•••
,1,2-Trichloroethane	ND			-	- A Recilou 0240	PM
	nv	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM .
richloroethene	ND	ug/kg	113/ 11/0/ 105			
		-37 1.3	1134 11/04/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222693 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	TOT		
Trichlorofluoromethane	ND -			EQL	METHOD	BY
		ug/kg	1134 11/04/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	
trans-1,3-Dichloropropene	ND		·		EFA MECHOU 8240	PM
7 onto opi opcile	NU	ug/kg	1134 11/04/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1341 11/03/92	774		
West and		-0, 113	1341 11/03/92	330	EPA Method 8270	Р́М
Xylenes	ND	ug/kg	1134 11/04/92	10	EPA Method 8240	5 11
Total Petroleum Hydrocarbons	1/0				ETA FICTION 0240	PM
mydi ocai bolis	160	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-06-SS1/SS2 7.5-11.1 Comp

Collected By: JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222691 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Methylnaphthalene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Total Sonic Extraction	30->1	g->ml	1514 10/13/92		EPA Method 3550	GE
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	₩MB
Phenol Distillation	DISTILLED		2030 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	300	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	13	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	2.2	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.09	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	71	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	580	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	1000	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Acenaphthylene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

PARAMETER		91 Continu	ueu		Page	2
Acrolein	RESULTS	UNITS	ANALYZED	EQI	Vami	
	ND	ug/kg	0634 10/31/92			B
Acrylonitrile	ND	ug/kg			EPA Method 8240	PM
Aldrin		ug/kg	0634 10/31/92	100	EPA Method 8240	PM
Amel	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Anthracene	ND	ug/kg	1000 11/03/92	3 30		GO.
Benzene	ND	ug/kg	0634 10/31/92		EPA Method 8270	- GO
Benzidine	ND			5.0	EPA Method 8240	PM
Benzo(a)anthracene		ug/kg	1000 11/03/92	330	EPA Method 8270	~ GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Benzo(a)pyrene	ND	ug/kg	1000 11/03/92	3 30		GO
Benzo(b)fluoranthene	ND	ug/kg		330	EPA Method 8270	GO
Benzo(ghi)perylene	ND	_	1000 11/03/92	330	EPA Method 8270	GO
Benzo(k)fluoranthene		ug/kg	1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Bis(2-chloroethyl)ether	ND	ug/kg	1000 11/03/92	330		GO
Bis(2-chloroethoxy)methane	ND	ug/kg		330	EPA Method 8270	GO
Bis(2-chloroisopropyl)ether	ND	45, kg	1000 11/03/92	330	EPA Method 8270	GO
-Bromophenyl phenyl ether	NU	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
is(2-ethylhexyl)phthalate	ND	ug/kg	1000 11/03/92	770		GO
romoform	ND	ug/kg		330	EPA Method 8270	GŰ
romomethane	NO		0634 10/31/92	5.0	EPA Method 8240	PM
Chlorophenyl	ND	ug/kg	0634 10/31/92	10	EPA Method 8240	- PM
Chlorophenyl phenyl ether	ND	ug/kg	1000 11/03/92	330		
nzyl butyl phthalate	ND	ug/kg	1000 11/03/92		EPA Method 8270	GO
rbon Tetrachloride	ND			330	EPA Method 8270	GO
lorobenzene		ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
oroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
	ND	ug/kg	0634 10/31/92	10		r M
hloroethylvinyl ether	ND	ug/kg	067/ 40/74		EPA Method 8240	PM
			0634 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222691 Continued

				Page 3	3			
RESULTS	UNITS	ANALVZED	FOT	1				
ND	ug/kg	0634 10/31/92	5.0		BY			
ND	ug/kg	0634 10/31/92			PM			
ND	ug/kg				PM			
ND			330	EPA Method 8270	GO			
	ug/kg	1000 11/03/92	330	EPA Method 8270	GO			
ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO			
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM			
ND	ug/kg	1000 11/03/92	330	EPA Method 8270				
ND	ug/kg	1000 11/03/92	33 0		GO			
ND	ug/kg				GO			
ND	_		220	EPA Method 8270	GO			
	_	1000 11/03/92	670	EPA Method 8270	GO			
	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM			
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	РM			
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	P M			
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240				
ND	ug/kg	0634 10/31/92			PM			
ND	ua/ka			•	PM			
ND	· -		1.0	EPA Method 8240	PM			
	ug/kg	0634 10/31/92	5.0	EPA Method 8240	РМ			
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM			
ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO			
ND	ug/kg	1000 11/03/92	330	EPA Method 8270				
ND	ug/kg	1000 11/03/92			GO			
ND	ug/kg				GO			
ND	-		330	EPA Method 8270	GO			
	ug/kg	1000 11/03/92	330	EPA Method 8270	GO			
טא	ug/kg	1000 11/03/92	330	EPA Method 8270	GO			
	ND N	ND ug/kg ND ug/kg	ND	ND	RESULTS UNITS ANALYZED EQL METHOD ND Ug/kg 0634 10/31/92 5.0 EPA Method 8240 ND Ug/kg 0634 10/31/92 10 EPA Method 8240 ND Ug/kg 1000 11/03/92 330 EPA Method 8270 ND Ug/kg 0634 10/31/92 5.0 EPA Method 8240 ND Ug/kg 0634 10/31/92 5.0 EPA Method 8240 </td			



Analytical Chemistry • Utility Operations

11/05/92

222691 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
1,2-DPH (as azobenzene)	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	BY GO
					ETA HECHOG 0270	GU
Ethyl benzene	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Fluoranthene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	60
el				330	EFA Method 8270	GO
Fluorene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Hexach lorobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Hexachlorobutadiene					Zi A Hethod BZi b	do
nexactitot obdtad tene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	น ั
Hexachlorocyclopentadiene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Hexachloroethane	ND					40
MONAGER OF CERTAINE	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Isophorone	ND	ug/kg	1000 11 107 100			
	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Methylene Chloride	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1000 11/03/92	330	504 W. Al. (0070	
		-37 N3	1000 11703/92	330	EPA Method 8270	GO
Nitrobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
N-nitrosodimethylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	
Nakitanandi a una d		J. J	1170 11700772	330	LFA Method 8270	GO
N-Nitrosodi-n-propylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
N-nitrosodiphenylamine	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	ଦ୍ୱେ
Phenanthrene					E. A. Heemod GEFO	u₁.
THE HATTERN CHE	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
Pyrene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	ç.
1,1,2,2-Tetrachloroethane	ND		0/7/ 40 7			
	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
Toluene	53	ua/ka	047/ 40/74/00	• •		
	23	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1000 11/03/92	330	EPA Method 8270	GO
1,1,1-Trichloroethane	ND	ug/kg	0634 10/31/92	5.0	EDA N-41 LOCAS	_
4.4.2.		~3/ N3	0034 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222691 Continued

Page 5

				i uge J	
RESULTS	UNITS ug/kg	ANALYZED 0634 10/31/92	EQL 5.0	METHOD EPA Method 8240	BY
ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
ND	ug/kg	0634 10/31/92	5.0	EPA Method 8240	PM
ND	ug/kg	0634 10/31/92	10	EPA Method 8240	PM
430	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO
	ND ND ND ND	ND ug/kg ND ug/kg ND ug/kg ND ug/kg ND ug/kg ND ug/kg	ND	ND	ND

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-07-SS1/SS2 8-11.6' Comp

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222689

Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1535 10/13/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2030 10/09/92		EPA Method 420.1	WKC
Total Arsenic	2.6	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	810	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	16	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	31	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.2	mg/kg	1330 10/15/92	.001	EPA Method 7470	LŴ
Total Nickel	34	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	300	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	280	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222689 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzidine	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
3,3′-Dichlorobenzidine	ND	ug/kg	1328 11/04/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222689 Continued

					Page 3		
PARAMETER	RESULTS	UNITS	ANALYZED				
2,4-Dinitrotoluene	ND	ug/kg	1328 11/04/92	EQL	METHOD	B	
2 4-Diniana 1			1320 11/04/92	330	EPA Method 8270	PM	
2,6-Dinitrotoluene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270		
1,2-DPH (as azobenzene)	ND				ETA MELITOD 6270	PM	
	NU	ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
Fluoranthene	ND	ug/kg	1720 44 101 122			•••	
et.		43/ 13	1328 11/04/92	330	EPA Method 8270	PM	
Fluorene	ND	ug/kg	1328 11/04/92	330		-	
Hexachlorobenzene				230	EPA Method 8270	PM	
Serie Serie	ND .	ug/kg	1328 11/04/92	330	EPA Method 8270	.e.,	
Hexachlorobutadiene	ND	41			// //callod 6270	Ρ̈́M	
		ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
Hexachlorocyclopentadiene	ND	ug/kg	1328 11/04/92	~			
Hexachloroethane		S. Q	1320 11/04/92	330	EPA Method 8270	PM	
nevacutor dethane	ND	ug/kg	1328 11/04/92	330	EPA Method 8270		
Indeno(1,2,3-cd)pyrene	ND				LFA Method 6270	PM	
., ., ., .,	NU	ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
Isophorone	ND	ug/kg	1720 44 107 100			• • • • • • • • • • • • • • • • • • • •	
Northet . I		437.43	1328 11/04/92	330	EPA Method 8270	PM	
Naphthalene	ND	ug/kg	1328 11/04/92	330	EDA W. J. J. Anna		
Nitrobenzene	ND		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	230	EPA Method 8270	PM	
· ·	ND	ug/kg	1328 11/04/92	330	EPA Method 8270	DM	
N-nitrosodimethylamine	ND	ug (ke				PM	
N. M. C.		ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
N-Nitrosodi-n-propylamine	ND	ug/kg	1328 11/04/92	770			
N-nitrosodiphenylamine			1020 11704792	330	EPA Method 8270	PM	
and the state of t	ND	ug/kg	1328 11/04/92	330	EPA Method 8270		
Phenanthrene	ND				Hethod 6270	PM_	
	,,,,	ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
Pyrene	ND	ug/kg	1328 11/04/92	~~-		_	
1,2,4-Trichlorobenzene		55	1320 11/04/92	330	EPA Method 8270	PM	
72,4 Trichtor obenzene	ND	ug/kg	1328 11/04/92	330	EPA Method 8270		
2-Methylnaphthalene	ND				Era method 8270	PM	
	NU	ug/kg	1328 11/04/92	330	EPA Method 8270	PM	
Total Petroleum Hydrocarbons	370	mg/kg	1500 10/00/00				
			1500 10/08/92	10	EPA Method 418.1	TEO	

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF2-10-SS2 6-7.6'

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222688 Received: 10/07/92

Client: ARS1

					VERTION	77.77
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD EPA Method 3550	BY DDM
Total Sonic Extraction	30->1	g->ml	1525 10/13/92		EPA Method 3330	MUU
Hydrocarbon Sonication Extract.	Completed		1400 10/08/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	1200	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	7.7	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	25	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	21	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	72	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	67	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1910 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222688 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1910 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	P M
Benzidine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	РМ
Bis(2-chloroisopropyl)ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	РМ
4-Bromophenyl phenyl ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	P14
4-Chlorophenyl phenyl ether	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	,# PM
Carbon Tetrachloride	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	₽M
2-Chloroethylvinyl ether	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222688 Continued

					rage 3	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	
2-Chloronaphthalene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	BY PM
Chrysene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	
Dibenzo(a,h)anthracene	ND	ug/kg	1337 11/05/92	330		PM
Dibromochloromethane	ND	ug/kg	1910 11/03/92		EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg		5.0	EPA Method 8240	PM
1,2-Dichlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
1 /-Dishlassi		ug/kg	1337 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg .	1337 11/05/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	
trans-1,2-Dichloroethene	ND	ug/kg	1910 11/03/92	5.0		PM
Dichlorodiflouromethane	ND	ug/kg	1910 11/03/92		EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg		1.0	EPA Method 8240	PM
cical Zabiaklas		ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Diethyl phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	
2,4-Dinitrotoluene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1337 11/05/92	330		PM
1,2-DPH (as azobenzene)	ND	ug/kg	1337 11/05/92		EPA Method 8270	PM
Ethyl benzene	ND			330	EPA Method 8270	PM
	ii v	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92 222688 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Fluoranthene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1337 11/05/92	3 30	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	₽M
Methylene Chloride	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM"
1,1,2,2-Tetrachloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1337 11/05/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	1910 11/03/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222688 Continued

Page 5

PARAMETER					•	
Vinyl Chloride	RESULTS ND	UNITS ug/kg	ANALYZED 1910 11/03/92	EQL 10	METHOD	BY
trans-1,3-Dichloropropene	ND	ug/kg	1910 11/03/92		EPA Method 8240	PM
2-Methylnaphthalene	ND			5.0	EPA Method 8240	PM
Xylenes		ug/kg	1337 11/05/92	330	EPA Method 8270	PM
•	ND	ug/kg	1910 11/03/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	140	mg/kg	1500 10/08/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX K

ANALYTICAL RESULTS FROM WATER SAMPLES FROM LANDFILL NO. 2



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZA

L2-11

Collected By:

10/06/92

Date & Time Taken:

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04) Lab Sample Number: 222872

Received: 10/09/92

Client: ARS1

			, ,		CITEHC:	AKSI
PARAMETER	RESULTS	UNITS	ANALYZED	- FOT		
Xylenes	ND	ug/l	1042 10/29/92	EQL 5.0	METHOD EPA Method 8240	BY GO
Acrolein	ND	ug/l	1042 10/29/92	100	EPA Method 8240	
Acrylonitrile	ND	ug/l	1042 10/29/92	100	EPA Method 8240	GO
Benzene	168	ug/l	1042 10/29/92	5.0		GO
Bromoform	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l			EPA Method 8240	GO
Carbon Tetrachloride	ND	-	1042 10/29/92	10	EPA Method 8240	GO
Chlorobenzene		ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GQ
2-Chloroethylvinyl ether	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/(1042 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
,2-Dichloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
,1-Dichloroethene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222872 Continued

					raye 2	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	VERTOR	
trans-1,2-Dichloroethene	ND	ug/l	1042 10/29/92	5.0	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1042 10/29/92		EPA Method 8240	GO
1,2-Dichloropropane			1042 10/29/92	1.0	EPA Method 8240	GO
72 Promor op: opane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	
1,1,2,2-Tetrachloroethane	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1042 10/29/92	5.0		GO
Toluene	27	ug/l	1042 10/29/92		EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l		5.0	EPA Method 8240	GO
,1,2-Trichloroethane		-3/ -	1042 10/29/92	5.0	EPA Method 8240	GO
	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO
richlorofluoromethane	ND	ug/l	1042 10/29/92	10	EPA Method 8240	
inyl Chloride	ND	ug/l	1042 10/29/92	10	EPA Method 8240	GO
rans-1,3-Dichloropropene	ND ·			. •	EFA MECHOO 0240	GO
, ,	NO	ug/l	1042 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZB LZ-11-6

Collected By:

10/06/92

Date & Time Taken:

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Nur PARAMETER		Receive	ed: 10/09/92		Client:	ARS1
Acrolein	RESULTS	UNITS	ANALYZED	EQL	VERNO	
Actorein	ND	ug/l	0934 10/29/92	_	METHOD	BY
Acrylonitail			0,04 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	0934 10/29/92	100	EPA Method 8240	
Benzene	ND	ug/l	0934 10/29/92			GO
Promoti.		0 , -	0934 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	0934 10/29/92	5.0	PR4 44 4 4 4 4 4	
Bromomethane				5.0	EPA Method 8240	GO
	ND	ug/l	0934 10/29/92	10	EPA Method 8240	
Carbon Tetrachloride	ND				ELM MECHOD 8240	GO
	NU	ug/l	0934 10/29/92	5.0	EPA Method 8240	60
Chlorobenzene	ND	ug/l	2074			40
		ug/ t	0934 10/29/92	5.0	EPA Method 8240	GO
hloroethane	ND	ug/[0934 10/29/92	10		
-Chloroethylvinyl ether			0754 10729792	10	EPA Method 8240	GO
onto bethytvingt ether	ND	ug/į	0934 10/29/92	10	EDA Marke d 00/0	
loroform	NB			.0	EPA Method 8240	GO
	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	co
nloromethane	ND					GO
		ug/l	0934 10/29/92	10	EPA Method 8240	GO
bromochloromethane	ND	ug/l	007/ 40/20/22			
		-3/ •	0934 10/29/92	5.0	EPA Method 8240	GO
romodichloromethane	ND	ug/l	0934 10/29/92	5.0	55.	
1-Dichloroethane			101 10/2///2	3.0	EPA Method 8240	GO
oc thank	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	
2-Dichloroethane	ND				LEA Method 0240	GO
	NO	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
l-Dichloroethene	ND	ug/l				40
		ug/ (0934 10/29/92	5.0	EPA Method 8240	GO
ans-1,2-Dichloroethene	ND	ug/l	0934 10/29/92			
		J. -	0734 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222870 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	0934 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	0934 10/29/92	5.0	EPA Method 8240	GO
Xylenes	ND	ug/l	0934 10/29/92	10	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZC LZ-11-9

Collected By:

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222868 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	2027 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	2027 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	. ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GĐ
2-Chloroethylvinyl ether	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222868 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	2027 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	2027 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	2027 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C. H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

Collected By:

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222869 Received: 10/09/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	0901 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	0901 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/l	0901 10/29/92	10	EPA Method 8240	ຣລ
Chloroform	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222869 Continued

Page 2

					Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED			
Dichlorodiflouromethane	ND	ug/l		EQL	METHOD	BY
		3 9, t	0901 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/i	0901 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	
Methylene Chloride	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	0901 10/29/92	5.0		GO
Tetrachloroethene	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l			EPA Method 8240	GO
		ug/ t	0901 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Trichloroethen e	ND	ug/l	0901 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	0901 10/29/92	10	EPA Method 8240	
Vinyl Chloride	ND	ug/l	0901 10/29/92	10		GO
trans-1,3-Dichloropropene	ND	ug/l	0901 10/29/92		EPA Method 8240	GO
(ylenes		.	0,01 10/29/92	5.0	EPA Method 8240	GO
, , , , , , , , , , , , , , , , , , ,	ND	ug/l	0901 10/29/92	10	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D. President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF2-PZE LZ-11-8

Collected By:

JPJ

Date & Time Taken:

10/06/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222871 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1008 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1008 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GG
2-Chloroethylvinyl ether	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222871 Continued

Page 2

	·					
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1008 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1008 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1008 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX L

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM LANDFILL NO. 4



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-05-SS1 3'-4.6'

Collected By:

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

JPJ

Lab Sample Number: 222860 Received: 10/09/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->8	g->ml	1350 10/21/92	_	EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	72	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	360	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	47	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	57	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.2	mg/kg	1330 10/15/92	.001	EPA Method 7470	LĦ
Total Nickel	42	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	1400	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	310	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Acrolein	ND	ug/kg	2017 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222860 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	2017 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Bromoform	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92 222860 Continued

•	•					
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Chrysene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	₽M
1,3-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1431 11/04/92	5300	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	2017 11/03/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	РM
Diethyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	P M
Di-n-butylphthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222860 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Fluoranthene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Fluorene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Isophorone	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
Pyrene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222860 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	2017 11/03/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1431 11/04/92	2600	EPA Method 8270	P M
Xylenes	ND	ug/kg	2017 11/03/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	8000	mg/kg	0900 10/13/92	100	EPA Method 418.1	· TEO

I certify that the results were generated using the above specified methods.

Ph.D., President Whiteside,



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-05-SS2 6'-7.6'

Collected By:

JPJ

Date & Time Taken:

10/02/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:	222861	Received:	10/09/92		Client: AF	RS1
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	217->1	ml->ml	1404 10/22/92	_	EPA Method 3510	GE
TCLP Liq-Liq Extr. W/Hex Exch.	217->2	ml->ml	1435 10/22/92		EPA Method 3510	DDM
TCLP ZHE Volatile Extraction	79.0% Sol	Completed.	1700 10/17/92		EPA Method 1311	LM
TCLP Extraction	Aque/Sol/Ext#1		1533 10/20/92		EPA Method 1311	RJH
Esterification of Sample Extract	Completed.		1400 11/02/92		EPA Method 8150	KB
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Gamma-BHC (Lindane) (.4)	ND	mg/l	1240 11/02/92	0.00036	EPA Method 8080-TCLP	KB
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Chlordane (Reg. Limit 0.03)	ND	mg/l	1240 11/02/92	0.0013	EPA Method 8080-TCLP	KB
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	.94	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	.31	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Endrin (Reg. Limit 0.02)	ND	mg/l	1240 11/02/92	0.00055	EPA Method 8080-TCLP	KB



Analytical Chemistry • Utility Operations

222861 Continued

					Page 2	
PARAMETER	RESULTS	UNITS	ANALYZED	707		
TCLP Heptachlor (Limit .008)	ND	mg/l	1240 11/02/92		METHOD	BY
TOLD Hamasaki		•	1240 11/02/76	0.0002	7 EPA Method 8080-TCLP	KB
TCLP Heptachlor Epoxide (.008)	ND	mg/l	1240 11/02/92	0.0075	EDA Mothod 2000 Tolo	
TCLP Hexachlorobenzene (.13)	AIR		•	0.00,5	EPA Method 8080-TCLP	KB
	ND	mg/l	0340 11/05/92	0.23	EPA Method 8270-TCLP	Du
TCLP Hexachlorobutadiene (.5)	ND				E. H. HECHOG GETO-TUEF	PM
	NU	mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mn/1				r m
		mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	07/0 44/05/00			• · · · · · · · · · · · · · · · · · · ·
		···3/ •	0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	0340 11/05/92	0.045		
TCID Totpocking		- -	0340 11/03/76	0.045	EPA Method 8270-TCLP	PM
TCLP Tetrachloroethylene (.7)	ND	mg/l	0229 11/04/92	0.05	PDA M-41-1 02/0	l
TCLP Toxaphene (Reg. Limit 0.5)			· · · · · · · · · · · · · · · · · · ·	0.05	EPA Method 8240-TCLP	PM
to the state of th	ND	mg/l	1240 11/02/92	0.022	EPA Method 8080-TCLP	145
TCLP Trichloroethylene (.5)	ND			<u></u>	ELY MERION ONON-10Th	KB
	NU	mg/l	0229 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	ma / l				FFI
		mg/(0340 11/05/92	0.045	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0220 44404402			
TOLD D / D		m3/ C	0229 11/04/92	0.1	EPA Method 8240-TCLP	PM
TCLP 2,4 D (Reg. Limit 10)	ND	mg/l	1530 11/02/92	0 11		l
TOID 2 4 5-Triphlonomband 4/00			.550 11/02/72	0.11	EPA Method 8150-TCLP	KB
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/[0340 11/05/92	0.045	EDA Mathad 0070 main	
TCLP 2,4,5-TP (Silvex) (RL 1)	110		· -	0.075	EPA Method 8270-TCLP	PM
, ,	ND	mg/l	1530 11/02/92	0.015	EPA Method 8150-TCLP	V6
TCLP Cresol (Reg. Limit 1)	1.1				TO A STATE OF THE PARTY OF THE	KB
		mg/l	0340 11/05/92	0.045	EPA Method 8270-TCLP	РМ
TCLP MEK (Reg. Limit 200)	.49	mg/l	0200 41.04			
		mg/ t	0229 11/04/92	0.5	EPA Method 8240-TCLP	PM
TCLP Methoxychlor (RL 10)	ND	mg/l	12/0 11/02/02	* ***		-
TOLD Dunidia on the same			1240 11/02/92	0.016	EPA Method 8080-TCLP	KB
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	0340 11/05/92	በ በረፍ		
Metals Digestion TCLP 3010			42.10 11,00,72	0.045	EPA Method 8270-TCLP	PM
regres prigestron lett 2010	Digested 50/10	a/s	2200 10/29/92		EDA Mother 3010	
Metals Digestion - TCLP 7470	Discount Force				EPA Method 3010	KDC
	Digested 50/10	a/s	0800 10/27/92		EPA Method 7470	DC .
CLP Silver (Reg. Limit 5.0)	ND				arm neemod 1470	BG
	NO.	mg/l	1104 11/06/92	.01	EPA Method 6010	LW
CLP Arsenic (Reg. Limit 5.0)	ND	mg/l	4407 40 40 40			
0.5		ma) r	1104 11/06/92	.2	EPA Method 6010	LW
CLP Barium (Reg. Limit 100.0)	ND	mg/l	1104 11/06/92			
		•	1104 11/00/32	1.0 E	EPA Method 6010	LW



Analytical Chemistry • Utility Operations

222861 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Cadmium (Reg. Limit 1.0)	.14	mg/l	1104 11/06/92	.01	EPA Method 6010	LW
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92	.02	EPA Method 6010	LW
TCLP Mercury (Reg. Limit 0.2)	ND	mg/t	1430 10/28/92	.005	EPA Method 7470	LW
* TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1104 11/06/92	.1	EPA Method 6010	LW
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	1104 11/06/92	.2	EPA Method 6010	LW

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-06-SS1/SS2/SS3 2'-9.6'Comp

Collected By: JPJ

Date & Time Taken:

10/02/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222862 Received: 10/09/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1355 10/21/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	380	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	17	mg/kg	0938 11/05/92	-1	EPA Method 6010	GDG
Total Chromium	48	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	.1	mg/kg	1330 10/15/92	.001	EPA Method 7470	L¥
Total Nickel	38	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	340	mg/kg	0938 11/05/92	1	EPA Method 6010	G DG
Total Zinc	380	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 FL	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1549 11/03/92	100	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222862 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1549 11/03/92	100	EPA Method 8240	GO
Anthracene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Benzidine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzo(a)anthracene	3400	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzo(a)pyrene	2200	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	830	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	1000	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	₽₩
Bis(2-chloroethoxy)methane	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PN
Bis(2-chloroisopropyl)ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PN
Bis(2-ethylhexyl)phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PN
Bromoform	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GC
Bromomethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	GC
4-Chlorophenyl phenyl ether	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PI
Benzyl butyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PI
Carbon Tetrachloride	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G
Chlorobenzene	140	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G
Chloroethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	G
2-Chloroethylvinyl ether	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	GC
Chloroform	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G
Chloromethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	G



Analytical Chemistry • Utility Operations

11/05/92

222862 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Chrysene	5800	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	Ga
1,3-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	0015 11/05/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/kg	1549 11/03/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	G O
cis-1,3-Dichloropropene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	පෙ
Diethyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Ethyl benzene	80	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222862 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	930	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexach Lorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Naphthalene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Phenanthrene	2100	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
Pyrene	2500	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,2,4-Trichlorobenzene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222862 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	1549 11/03/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
2-Methylnaphthalene	ND	ug/kg	0015 11/05/92	330	EPA Method 8270	P M
Xylenes	150	ug/kg	1549 11/03/92	5.0	EPA Method 8240	GO
Total Petroleum Hydrocarbons	11000	mg/kg	0900 10/13/92	100	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-06-SS4 13'-14.6'

Collected By:

JPJ

Date & Time Taken:

10/09/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222863

Received: 10/09/92

ANALYZED EOL METHOD BY RESULTS UNITS PARAMETER EPA Method 3550 LM 30->1 g->ml 1811 10/21/92 Total Sonic Extraction EPA Method 6010 0938 11/05/92 GDG Total Arsenic ND mg/kg 0938 11/05/92 EPA Method 6010 GDG 630 mg/kg Total Barium 0938 11/05/92 EPA Method 6010 GDG 2.4 mg/kg Total Cadmium 0938 11/05/92 .2 EPA Method 6010 GDG Total Chromium 38 mg/kg 1330 10/15/92 .001 EPA Method 7470 LW ND mg/kg Total Mercury EPA Method 6010 0938 11/05/92 .6 GDG Total Nickel mg/kg EPA Method 6010 GDG 8.1 0938 11/05/92 Total Lead mg/kg EPA Method 6010 GDG 54 mg/kg 0938 11/05/92 . 1 Total Zinc EPA Method 3050 Fl JHL 0830 10/26/92 Metals Digestion - 3050 Fl Digested 50/4 EPA Method 7471 1600 10/14/92 BWP Metals Digestion - 7471 Digested 50/1 EPA Method 8240 1622 11/03/92 100 PM Acrolein ND ug/kg EPA Method 8240 PM 1622 11/03/92 100 Acrylonitrile ND ug/kg EPA Method 8240 Renzene ND ug/kg 1622 11/03/92 5.0 PM 1622 11/03/92 5.0 EPA Method 8240 PM ND ug/kg Bromoform EPA Method 8240 PM 1622 11/03/92 10 ND ug/kg Bromomethane EPA Method 8240 PM Carbon Tetrachloride ND ug/kg 1622 11/03/92 5.0



Analytical Chemistry • Utility Operations

222863 Continued

PARAMETER	DECUTES					
Chlorobenzene	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM:
2-Chloroethylvinyl ether	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	
Chloroform	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM - PM
Dibromochloromethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM:
Bromodichloromethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1622 11/03/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Ethyl benzene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	
1,1,2,2-Tetrachloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM -
Tetrachloroethene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM ~
1,1,1-Trichtoroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM DM
1,1,2-Trichloroethane	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM PM
richloroethene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
richlorofluoromethane	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM
inyl Chloride	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222863 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,3-Dichloropropene	ND	ug/kg	1622 11/03/92	5.0	EPA Method 8240	PM
Xylenes	ND	ug/kg	1622 11/03/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: LF4-10-SS1 8'-9.6'

Collected By:

10/02/92

Date & Time Taken:

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222864 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1814 10/21/92		EPA Method 3550	LM
Hydrocarbon Sonication Extract.	Completed		1700 10/12/92		EPA Method 3550 *MOD	TEO
Phenols	ND	mg/kg	1650 10/15/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1630 10/14/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	640	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	25	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	200	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	41	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	23	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	40	mg/kg	0938 11/05/92	.1	EPA Method 6010	G D G
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1655 11/03/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1655 11/03/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	РМ
Benzo(a)anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
_ Benzo(a)pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	РМ
Benzyl butyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	РМ
Chloroform	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	РМ
Chloromethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	РМ



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
2-Chloronaphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	P M
Dibenzo(a,h)anthracene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	РМ
Dibromochloromethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,3-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM~
1,4-Dichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1127 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1655 11/03/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM.
Diethyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM T
Di-n-butylphthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222864 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	P M
Hexachlorocyclopentadiene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222864 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	1655 11/03/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1127 11/04/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	1655 11/03/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	54	mg/kg	0900 10/13/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

APPENDIX M

ANALYTICAL RESULTS FROM WATER SAMPLES FROM LANDFILL NO. 4

THE COMPLETE SERVICE LAB

Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-05-W1 @9'

Collected By:

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222867 Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	1953 10/29/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/l	1953 10/29/92	100	EPA Method 8240	PM
Benzene	110	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromoform	37	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
Chloroform	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM -
Dibromochloromethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	17	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	21	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	220	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM

Analytical Chemistry • Utility Operations

222867 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1953 10/29/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Ethyl benzene	230	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,2,2-Tetrachloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Tetrachloroethene	35	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Toluene	3400	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Trichloroethene	200	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/l	1953 10/29/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/l	1953 10/29/92	5.0	EPA Method 8240	PM
Xylenes	570	ug/l	1953 10/29/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-06-W1 @4'

Collected By:

Date & Time Taken:

10/01/92

Other Data: AFSCAPS Tinker AFB Job #5735

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222865

Received: 10/09/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	1844 10/29/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/l	1844 10/29/92	100	EPA Method 8240	PM
Benzene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromoform	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chlorobenzene	50	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM_
Chloroform	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM-
Dibromochloromethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222865 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1844 10/29/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Ethyl benzene	110	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Methylene Chloride	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	P M
1,1,2,2-Tetrachloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	РМ
Tetrachloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Toluene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1,1-Trichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
Vinyl Chloride	ND	ug/l	1844 10/29/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/l	1844 10/29/92	5.0	EPA Method 8240	PM
Xylenes	170	ug/l	1844 10/29/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

LF4-06-W2 @15.5'

Collected By:

Date & Time Taken: Other Data: AFSCAPS Tinker AFB Job #5735

10/01/92

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Client: ARS1 Lab Sample Number: 222866 Received: 10/09/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrolein	ND	ug/l	1919 10/29/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1919 10/29/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chlorobenzene	15	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO_
Chloroform	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

11/05/92

222866 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Dichlorodiflouromethane	ND	ug/l	1919 10/29/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Ethyl benzene	160	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1919 10/29/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO
Xylenes	ND	ug/l	1919 10/29/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.

APPENDIX N

ANALYTICAL RESULTS FROM SOIL SAMPLES FROM OFFBASE (BONNEWELL) AREA



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS1 6'-7'

Collected By:

Date & Time Taken:

09/28/92 1610

Other Data:

AFSCAPS Job # 5735, Tinker AFB

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222091

Received: 09/30/92

Client: ARS1 PARAMETER RESULTS UNITS METHOD ANALYZED EOL BY Total Sonic Extraction 30->1 g->ml 1259 10/13/92 EPA Method 3550 DDM Phenols 1445 10/12/92 EPA Method 420.1 mg/kg WMB Phenol Distillation DISTILLED 2030 10/08/92 EPA Method 420.1 WKC Total Arsenic mg/kg 1136 10/15/92 EPA Method 6010 RJC Total Barium 220 EPA Method 6010 1136 10/15/92 mg/kg .1 RJC Total Cadmium 1136 10/15/92 .1 EPA Method 6010 mg/kg RJC Total Chromium 16 mg/kg 1136 10/15/92 .2 EPA Method 6010 RJC 1200 11/05/92 Total Mercury ND .05 EPA Method 7470 mg/kg LW Total Nickel 8.6 1244 10/14/92 EPA Method 6010 mg/kg .6 RJC Total Lead mg/kg 1136 10/15/92 EPA Method 6010 RJC Total Zinc 1244 10/14/92 EPA Method 6010 RJČ mg/kg . 1 Metals Digestion - 3050 Fl Digested 50/4 0730 10/08/92 EPA Method 3050 Fl JHL Metals Digestion - 7471 Digested 50/1 2000 11/02/92 EPA Method 7471 KDC 2229 11/02/92 330 Acenaphthene ug/kg EPA Method 8270 PM Acenaphthylene ND ug/kg 2229 11/02/92 330 EPA Method 8270 PM Anthracene ND 2229 11/02/92 330 EPA Method 8270 ug/kg PM Benzidine ug/kg ND 2229 11/02/92 330 EPA Method 8270 PM



Analytical Chemistry • Utility Operations

222091 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzo(a)anthracene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	РМ
Benzyl butyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2229 11/02/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222091 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	P M
1,2-DPH (as azobenzene)	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM "
Hexachlorocyclopentadiene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM *
2-Methylnaphthalene	ND	ug/kg	2229 11/02/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road VT 05068-South Royalton, Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS2 9'-10'

Collected By:

Date & Time Taken:

09/28/92 1630

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222092

Received: 09/30/92

Client: ARS1 BY EQL METHOD PARAMETER RESULTS UNITS ANALYZED 1435 11/03/92 330 EPA Method 8270 GO 2-Methylnaphthalene ug/kg EPA Method 3550 GE 1323 10/13/92 30->1 g->ml Total Sonic Extraction EPA Method 420.1 WMB 1445 10/12/92 mg/kg Phenols 2030 10/08/92 EPA Method 420.1 WKC DISTILLED Phenol Distillation EPA Method 6010 RJC 1136 10/15/92 mg/kg Total Arsenic RJC mg/kg 1136 10/15/92 EPA Method 6010 1200 Total Barium RJC EPA Method 6010 mg/kg 1136 10/15/92 .1 Total Cadmium 1136 10/15/92 EPA Method 6010 RJC Total Chromium mg/kg .2 LW EPA Method 7470 1200 11/05/92 .05 ND mg/kg Total Mercury EPA Method 6010 RJC 23 mg/kg 1244 10/14/92 Total Nickel EPA Method 6010 RJC mg/kg 1136 10/15/92 Total Lead EPA Method 6010 RJC 1244 10/14/92 .1 28 mg/kg Total Zinc EPA Method 3050 Fl JHL Digested 50/4 0730 10/08/92 Metals Digestion - 3050 Fl EPA Method 7471 KDC Digested 50/1 2000 11/02/92 Metals Digestion - 7471 330 EPA Method 8270 GQ 1435 11/03/92 ND ug/kg Acenaphthene EPA Method 8270 GO ND ug/kg 1435 11/03/92 330 Acenaphthylene EPA Method 8270 GO 1435 11/03/92 330 Aldrin ND ug/kg



Analytical Chemistry • Utility Operations

222092 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzidine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(a)anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(a)pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO .
Benzo(b)fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzo(ghi)perylene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO -
Benzo(k)fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroethyl)ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroethoxy)methane	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-chloroisopropyl)ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
4-Bromophenyl phenyl ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
4-Chlorophenyl phenyl ether	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Benzyl butyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2-Chloronaphthalene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Chrysene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO _
Dibenzo(a,h)anthracene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,3-Dichtorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2-Dichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,4-Dichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
3,3'-Dichlorobenzidine	ND	ug/kg	1435 11/03/92	670	EPA Method 8270	GO
Diethyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Dimethyl phthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Di-n-butylphthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO



Analytical Chemistry • Utility Operations

222092 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Di-n-octylphthalate	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2,4-Dinitrotoluene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
2,6-Dinitrotoluene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2-DPH (as azobenzene)	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Fluoranthene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Fluorene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorobutadiene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachlorocyclopentadiene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Hexachloroethane	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Isophorone	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Naphthalene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Nitrobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-nitrosodimethylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-Nitrosodi-n-propylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
N-nitrosodiphenylamine	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Phenanthrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
Pyrene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO
1,2,4-Trichlorobenzene	ND	ug/kg	1435 11/03/92	330	EPA Method 8270	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B01-SS3 16'-17'

Collected By:

JPJ

Date & Time Taken:

09/28/92 1640

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222093 Received: 09/30/92 Client: ARS1

PARAMETER METHOD RESULTS EOL UNITS ANALYZED BY Total Sonic Extraction 30->1 g->ml 1344 10/13/92 EPA Method 3550 GE 1445 10/12/92 EPA Method 420.1 Phenols ND 5 mg/kg **WMB** Phenol Distillation DISTILLED 1800 10/07/92 EPA Method 420.1 **WKC** Total Arsenic 13 mg/kg 1136 10/15/92 EPA Method 6010 RJC Total Barium 74 1136 10/15/92 EPA Method 6010 RJC . 1 mg/kg Total Cadmium 1136 10/15/92 EPA Method 6010 RJC mg/kg . 1 Total Chromium 23 mg/kg 1136 10/15/92 .2 EPA Method 6010 RJC 1200 11/05/92 EPA Method 7470 .05 LW Total Mercury ND mg/kg EPA Method 6010 Total Nickel 1244 10/14/92 19 mg/kg .6 RJC Total Lead 3 EPA Method 6010 mg/kg 1136 10/15/92 1 RJC Total Zinc 29 EPA Method 6010 1244 10/14/92 _ 1 RJC mg/kg Metals Digestion - 3050 Fl Digested 50/4 0730 10/08/92 EPA Method 3050 Fl JHL Digested 50/1 Metals Digestion - 7471 2000 11/02/92 EPA Method 7471 KDC EPA Method 8270 Acenaphthene ug/kg 1233 11/04/92 330 PM Acenaphthylene ND ug/kg 1233 11/04/92 330 EPA Method 8270 PΜ Acrolein ND ug/kg 0058 10/31/92 100 EPA Method 8240 GO Acrylonitrile ND ug/kg 0058 10/31/92 100 EPA Method 8240 GO



$\textbf{Analytical Chemistry} \quad \bullet \quad \textbf{Utility Operations}$

222093 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВЧ
Anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Benzidine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
4-Chlorophenyl phenyl ether	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
2-Chloroethylvinyl ether	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
Chloroform	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
2-Chloronaphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

11/05/92

222093 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Chrysene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,3-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM≠
1,2-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1233 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
trans-1,2-Dichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/kg	0058 10/31/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Diethyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM⁻
Dimethyl phthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Fluoranthene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222093 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluorene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Naphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,2,4-Trichlorobenzene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/kg	0058 10/31/92	10	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222093 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
trans-1,3-Dichloropropene	ND	ug/kg	0058 10/31/92	5.0	EPA Method 8240	GO
2-Methylnaphthalene	ND	ug/kg	1233 11/04/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	0132 10/31/92	10	EPA Method 8240	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: OFB-B01-SS4 21'-22'

Collected By:

09/28/92 1715

Date & Time Taken:

Other Data: AFSCAPS Job # 5735, Tinker AFB
Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222094 Received: 09/30/92

Client: ARS1

_	PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
	Total Sonic Extraction	30->1	g->ml	1328 10/13/92		EPA Method 3550	GE
	Phenols	ND	mg/kg	1445 10/12/92	5	EPA Method 420.1	WMB
	Phenol Distillation	DISTILLED		1800 10/07/92		EPA Method 420.1	WKC
	Total Arsenic	1	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
	Total Barium	16	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
	Total Cadmium	1	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
	Total Chromium	8	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
	Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
•	Total Nickel	5.8	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
	Total Lead	ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
•	Total Zinc	8.1	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
	Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
	Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
	Acenaphthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
	Acenaph thy lene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
	Anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
	Benzidine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222094 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Benzo(a)anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P M
Benzo(k)fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM_
Bis(2-chloroethoxy)methane	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P.M
Bis(2-chloroisopropyl)ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM'
3,3'-Dichlorobenzidine	ND	ug/kg	0059 11/05/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222094 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
- Hexachlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
- Hexachlorobutadiene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	P M
Hexachloroethane	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	0059 11/05/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B02-SS2 11'-12'

Collected By: JE

Date & Time Taken:

09/28/92 1800

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222095 Received: 09/30/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1340 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		2100 10/07/92		EPA Method 420.1	WKC
Total Arsenic	3	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	290	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	5.3	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	19	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	14	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	6.4	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	21	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzidine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222095 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Benzo(a)anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	P M
Benzo(a)pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,3-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1631 11/03/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222095 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2,6-Dinitrotoluene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	₽Ħ
Fluorene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM .
Hexachlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM ~
Hexachlorocyclopentadiene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	P M
Hexachloroethane	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM _
Pyrene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	1631 11/03/92	330	EPA Method 8270	PM

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-B02-SS4 22'-23'

Collected By:

Date & Time Taken:

09/28/92 1830

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Client: ARS1 Lab Sample Number: 222097 Received: 09/30/92

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1508 10/13/92		EPA Method 3550	GE
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WKC
Total Arsenic	ND	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Barium	51	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Cadmium	3	mg/kg	1136 10/15/92	.1	EPA Method 6010	RJC
Total Chromium	12	mg/kg	1136 10/15/92	.2	EPA Method 6010	RJC
Total Mercury	ND	mg/kg	1200 11/05/92	.05	EPA Method 7470	LW
Total Nickel	10	mg/kg	1244 10/14/92	.6	EPA Method 6010	RJC
Total Lead	2	mg/kg	1136 10/15/92	1	EPA Method 6010	RJC
Total Zinc	13	mg/kg	1244 10/14/92	.1	EPA Method 6010	RJC
Metals Digestion - 3050 Fl	Digested 50/4		0730 10/08/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		2000 11/02/92		EPA Method 7471	KDC
Acenaphthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1100 10/31/92	100	EPA Method 8240	MIB
Acrylonitrile	ND	ug/kg	1100 10/31/92	100	EPA Method 8240	M1b



Analytical Chemistry • Utility Operations

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1b
Benzidine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM*
Benzo(a)pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Bromomethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
4-Chlorophenyl phenyl ether	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Chlorobenzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Chloroethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
2-Chloroethylvinyl ether	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	M1b
Chloroform	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M15
Chloromethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
2-Chloronaphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM



$\textbf{Analytical Chemistry} \quad \bullet \quad \textbf{Utility Operations}$

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Chrysene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MIB
1,3-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,4-Dichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	0838 11/04/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
1,1-Dichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	₩JP
1,2-Dichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M7b
1,1-Dichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
trans-1,2-Dichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Dichlorodiflouromethane	ND	ug/kg	1100 10/31/92	1.0	EPA Method 8240	WJP
1,2-Dichloropropane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MTb
cis-1,3-Dichloropropene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MNb
Diethyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M1b
Fluoranthene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222097 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluorene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	0838 11/04/92	3 30	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	0838 11/04/92	3 30	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM *
Hexachloroethane	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Isophorone	ND ·	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MTb
Naphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	P M
N-nitrosodimethylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	P M
Pyrene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MTb
Tetrachloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MJb
Toluene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
1,2,4-Trichlorobenzene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
1,1,2-Trichloroethane	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	M7b
Trichloroethene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	WJP
Trichlorofluoromethane	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP
Vinyl Chloride	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	WJP



Analytical Chemistry • Utility Operations

222097 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,3-Dichloropropene	ND	ug/kg	1100 10/31/92	5.0	EPA Method 8240	MJb
2-Methylnaphthalene	ND	ug/kg	0838 11/04/92	330	EPA Method 8270	PM
Xylenes	ND	ug/kg	1100 10/31/92	10	EPA Method 8240	M1b

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

OFB-03-SS1 5-6.7'

Collected By:

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222683 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1518 10/13/92		EPA Method 3550	GE
Hydrocarbon Sonication Extract.	Completed		1330 10/09/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1730 10/09/92		EPA Method 420.1	WKC
Total Arsenic	1	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	240	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	1.5	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	23	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW _
Total Nickel	14	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	3.2	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	20	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4	A/B/S	0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Acrolein	ND	ug/kg	1726 10/31/92	100	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222683 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	1726 10/31/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222683 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM.
1,3-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM-
1,4-Dichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2040 10/30/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	1726 10/31/92	1.0	EPA Method 8240	PM
1,2-Dichloropropane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Diethyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222683 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexach Lorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	P M
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	₽₩
Methylene Chloride	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM:
1,1,2,2-Tetrachloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Toluene	34	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

222683 Continued

Page 5

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	1726 10/31/92	10	EPA Method 8240	₽M
trans-1,3-Dichloropropene	ND	ug/kg	1726 10/31/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	2040 10/30/92	330	EPA Method 8270	P M
Xylenes	16	ug/kg	1726 10/31/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	56	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: OFB-04-SS1 4.0-5.6'

Collected By:

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222687 Received: 10/07/92

Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Total Sonic Extraction	30->1	g->ml	1540 10/13/92		EPA Method 3550	DDM
Hydrocarbon Sonication Extract.	Completed		1330 10/09/92		EPA Method 3550 *MOD	JT
Phenols	ND	mg/kg	1700 10/14/92	5	EPA Method 420.1	WMB
Phenol Distillation	DISTILLED		1800 10/13/92		EPA Method 420.1	CRH
Total Arsenic	ND	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Barium	130	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Cadmium	.98	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Total Chromium	16	mg/kg	0938 11/05/92	.2	EPA Method 6010	GDG
. Total Mercury	ND	mg/kg	1330 10/15/92	.001	EPA Method 7470	LW
Total Nickel	8.5	mg/kg	0938 11/05/92	.6	EPA Method 6010	GDG
Total Lead	8.4	mg/kg	0938 11/05/92	1	EPA Method 6010	GDG
Total Zinc	22	mg/kg	0938 11/05/92	.1	EPA Method 6010	GDG
Metals Digestion - 3050 Fl	Digested 50/4		0830 10/26/92		EPA Method 3050 Fl	JHL
Metals Digestion - 7471	Digested 50/1		1600 10/14/92		EPA Method 7471	BWP
Acenaphthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Acenaphthylene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	РМ
Anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222687 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Benzidine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(a)pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(ghi)perylene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM-
Bis(2-chloroethyl)ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Benzyl butyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
2-Chloronaphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM.
1,3-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM *
1,4-Dichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	2127 11/02/92	670	EPA Method 8270	PM
Diethyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM



Analytical Chemistry • Utility Operations

222687 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
2,4-Dinitrotoluene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Fluoranthene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Hexachloroethane	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Naphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Pyrene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
1,2,4-Trichlorobenzene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
2-Methylnaphthalene	ND	ug/kg	2127 11/02/92	330	EPA Method 8270	PM
Total Petroleum Hydrocarbons	19	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

C.H. Whiteside, Ph.D., President

307

Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road VT 05068-South Royalton, Attention: Jack Jemsek

Sample Identification:

OFB-04-SS2 5.6-7.4'

Collected By:

Date & Time Taken:

10/03/92

Other Data: Tinker AFB, Job # 5735

Bottle Data:

1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222686

Received: 10/07/92

PARAMETER RESULTS UNITS ANALYZED EOL METHOD BY 30->1 1458 10/13/92 EPA Method 3550 GΕ Total Sonic Extraction g->ml 1330 10/09/92 EPA Method 3550 *MOD Hydrocarbon Sonication Extract. Completed 1700 10/14/92 EPA Method 420.1 **WMB** Phenols ND mg/kg EPA Method 420.1 Phenol Distillation DISTILLED 1730 10/09/92 WKC 0938 11/05/92 EPA Method 6010 GDG Total Arsenic ND mg/kg 0938 11/05/92 EPA Method 6010 GDG Total Barium 140 . 1 mg/kg EPA Method 6010 Total Cadmium 1.6 mg/kg 0938 11/05/92 _ 1 GDG EPA Method 6010 0938 11/05/92 GDG Total Chromium 16 .2 mg/kg ND mg/kg 1330 10/15/92 .001 EPA Method 7470 LW Total Mercury Total Nickel 7.4 0938 11/05/92 -6 EPA Method 6010 GDG mg/kg 0938 11/05/92 EPA Method 6010 Total Lead 2.0 GD € mg/kg 0938 11/05/92 Total Zinc . 1 EPA Method 6010 GDG 12 mg/kg Metals Digestion - 3050 Fl Digested 50/4 0830 10/26/92 EPA Method 3050 Fl JHL A/B/S 1600 10/14/92 EPA Method 7471 Digested 50/1 BWP Metals Digestion - 7471 330 EPA Method 8270 Acenaphthene ND ug/kg 1539 11/03/92 PM EPA Method 8270 1539 11/03/92 330 PM Acenaphthylene ND ug/kg EPA Method 8240 PM 0601 10/31/92 100 Acrolein ND ug/kg



Analytical Chemistry • Utility Operations

222686 Continued

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Acrylonitrile	ND	ug/kg	0601 10/31/92	100	EPA Method 8240	PM
Anthracene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Benzidine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(a)anthracene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
- Benzo(a)pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(b)fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	РМ
Benzo(ghi)perylene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Benzo(k)fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethyl)ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroethoxy)methane	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-chloroisopropyl)ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
4-Bromophenyl phenyl ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bis(2-ethylhexyl)phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Bromoform	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
4-Chlorophenyl phenyl ether	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
⁴ Benzyl butyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Carbon Tetrachloride	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chlorobenzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
Chloroform	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	РМ



Analytical Chemistry • Utility Operations

222686 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
2-Chloronaphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Chrysene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Dibenzo(a,h)anthracene	ND	ug/kg	1539 11/03/92	3 30	EPA Method 8270	PM
Dibromochloromethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM ,
1,3-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,2-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM "
1,4-Dichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
3,3'-Dichlorobenzidine	ND	ug/kg	1539 11/03/92	670	EPA Method 8270	PM
Bromodichloromethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
trans-1,2-Dichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Dichlorodiflouromethane	ND	ug/kg	0601 10/31/92	1.0	EPA Method 8240	PM
1,2-Dichtoropropane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
cis-1,3-Dichloropropene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM •
Diethyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Dimethyl phthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Di-n-butylphthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Di-n-octylphthalate	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
2,4-Dinitrotoluene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
2,6-Dinitrotoluene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,2-DPH (as azobenzene)	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Ethyl benzene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92

222686 Continued

Page 4

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Fluoranthene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Fluorene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachlorobutadiene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Hexachlorocyclopentadiene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
~ Hexachloroethane	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Indeno(1,2,3-cd)pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Isophorone	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Methylene Chloride	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Naphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Nitrobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-nitrosodimethylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-Nitrosodi-n-propylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
N-nitrosodiphenylamine	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
Phenanthrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
• Pyrene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,1,2,2-Tetrachloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Tetrachloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Toluene	17	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,2,4-Trichlorobenzene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	PM
1,1,1-Trichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
1,1,2-Trichloroethane	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Trichloroethene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
Trichlorofluoromethane	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

11/05/92 222686 Continued

Page 5

DADAVAMED	D D G III M G	WITMA	3 1/3 7 1/2 20	707	VERTICE	
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Vinyl Chloride	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
trans-1,3-Dichloropropene	ND	ug/kg	0601 10/31/92	5.0	EPA Method 8240	PM
2-Methylnaphthalene	ND	ug/kg	1539 11/03/92	330	EPA Method 8270	P₩
Xylenes	ND	ug/kg	0601 10/31/92	10	EPA Method 8240	PM
Total Petroleum Hydrocarbons	29	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO

I certify that the results were generated using the above specified methods.

APPENDIX O

TCLP ANALYSES OF COMPOSITED FROM SAMPLES AND FRAC TANK RINSATE



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

DSW-1 FPA Comp Dr 1,3,8

Collected By:

Date & Time Taken:

10/06/92

UNITS

ml->ml

Other Data: Tinker AFB, Job # 5735

TCLP Liquid-Liquid Extraction

PARAMETER

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222697

RESULTS

1000->1

Received: 10/07/92

ANALYZED

1250 11/02/92

EQL

METHOD BY EPA Method 3510 GE

Client: ARS1

TCLP ZHE Volatile Extraction	100.0% sol	Completed.	1500 10/14/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1625 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	₽ M
TCLP Chlorobenzene (Limit 100)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	P M
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	F74
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	1159 11/06/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222697 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	2121 11/02/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND ·	mg/l	2121 11/02/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	2121 11/02/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	1159 11/06/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	860	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/b/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/B/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	1.7	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.05	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-2 WTP/OSC Comp Dr 1,5,6

Collected By:

Date & Time Taken:

10/06/92 1725

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222699 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1530 10/22/92		EPA Method 3510	GE
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/15/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1615 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	.019	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	ЬÑ
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	₽M
TCLP 1,1-Dichloroethene (.7)	ND .	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2345 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222699 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	1802 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	1802 11/03/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	1802 11/03/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2345 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	120	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	5.0	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	.03	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-3 WTP/OSC Drum 5

Collected By:

Date & Time Taken:

10/06/92 1725

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222701 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1510 10/22/92		EPA Method 3510	GE
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/16/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1540 10/20/92		EPA Method 1311	RJH
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PH
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	.007	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2254 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

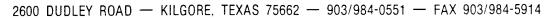
222701 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	2305 11/03/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/t	2305 11/03/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	2305 11/03/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2254 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	83	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	3.2	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	.01	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.





Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-4 FTA Comp Dr 1,2

Collected By: JPJ

Date & Time Taken:

10/06/92 1730

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222702 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	2112 10/23/92	-	EPA Method 3510	LM
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1430 10/16/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1525 10/21/92		EPA Method 1311	LD
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	P#
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	FM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l ·	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND ,	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	2154 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222702 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	0121 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0121 11/04/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	0121 11/04/92	. 0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	2154 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	1900	mg/kg	1200 10/10/92	100	EPA Method 418.1	TEO
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	2.5	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/06/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification: DSW-5 OFB Comp Dr 1,2

Collected By: JPJ

Date & Time Taken:

10/06/92 1735

Other Data: Tinker AFB, Job # 5735

Bottle Data: 1 -- Unpreserved Plastic/Glass (00)

Lab Sample Number: 222703 Received: 10/07/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Liquid-Liquid Extraction	1000->1	ml->ml	1721 10/22/92		EPA Method 3510	LM
TCLP ZHE Volatile Extraction	100.0% Sol	Completed.	1700 10/17/92		EPA Method 1311	LM
TCLP Extraction	Solid/Ext#1		1515 10/21/92		EPA Method 1311	102
Hydrocarbon Sonication Extract.	Completed		1130 10/10/92		EPA Method 3550 *MOD	TEO
TCLP Benzene (Reg. Limit 0.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Carbon Tetrachloride (.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chlorobenzene (Limit 100)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Chloroform (Reg. Limit 6.0)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,4 Dichlorobenzene: RL 7.5	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	РM
TCLP 1,2-Dichloroethane (RL .5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 1,1-Dichloroethene (.7)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4-Dinitrotoluene (.13)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorobenzene (.13)	ND	mg/l	0441 11/05/92	0.05	EPA Method 8270-TCLP	PM
TCLP Hexachlorobutadiene (.5)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Hexachlorethane (Limit 3)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Nitrobenzene (Limit 2)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Pentachlorophenol (100)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM



Analytical Chemistry • Utility Operations

222703 Continued

Page 2

	•					
PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Tetrachloroethylene (.7)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP Trichloroethylene (.5)	ND	mg/l	0013 11/04/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Vinyl Chloride (.2)	ND	mg/l	0013 11/04/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP Cresol (Reg. Limit 1)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
TCLP MEK (Reg. Limit 200)	ND	mg/l	0013 11/04/92	0.05	EPA Method 8240-TCLP	PM
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	0441 11/05/92	0.01	EPA Method 8270-TCLP	PM
Total Petroleum Hydrocarbons	24	mg/kg	1200 10/10/92	10	EPA Method 418.1	TEQ
Metals Digestion TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - TCLP 7470	Digested	A/S	2200 10/23/92		EPA Method 7470	KDC
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	3.8	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	.007	mg/l	1515 11/06/92	.001	EPA Method 7470	RJC
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Client: ARS1

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

Frac Tank Decon Rinsate

Collected By:

JPJ

Date & Time Taken:

10/07/92

Other Data: AFSCAPS T

AFSCAPS Tinker AFB Job #5735

Bottle Data:

3 -- Unpreserved Plastic/Glass (00)

Lab Sample Number:

222897

Received: 10/09/92

PARAMETER RESULTS UNITS ANALYZED EOL METHOD BY TCLP Liquid-Liquid Extraction 337->1 ml->ml 1507 10/22/92 EPA Method 3510 DDM TCLP Liq-Liq Extr. W/Hex Exch. 337->2 ml->ml EPA Method 3510 1440 10/22/92 GE TCLP ZHE Volatile Extraction 13.0% Sol Completed. 1700 10/17/92 EPA Method 1311 LM TCLP Extraction Aqueous EPA Method 1311 1330 10/20/92 RJH Esterification of Sample Extract Completed. 0900 10/27/92 EPA Method 8150 ΚB Fax This Report AS Soon As DONE! FAXED 06:3011/02/92 TCLP Benzene (Reg. Limit 0.5) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP Gamma-BHC (Lindane) (.4) ND mg/l 1630 10/26/92 0.00024 EPA Method 8080-TCLP KB TCLP Carbon Tetrachloride (.5) ND 0725 10/30/92 mg/l 0.005 EPA Method 8240-TCLP ΡM TCLP Chlordane (Reg. Limit 0.03) ND 1630 10/26/92 mg/l 0.00082 EPA Method 8080-TCLP ΚB TCLP Chlorobenzene (Limit 100) ND mg/l 0725 10/30/92 EPA Method 8240-TCLP 0.005 PM TCLP Chloroform (Reg. Limit 6.0) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP TCLP 1,4 Dichlorobenzene: RL 7.5 ND mg/l 1607 10/30/92 0.029 EPA Method 8270-TCLP WJP TCLP 1,2-Dichloroethane (RL .5) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP 1,1-Dichloroethene (.7) ND mg/l 0725 10/30/92 0.005 EPA Method 8240-TCLP PM TCLP 2,4-Dinitrotoluene (.13) ND mg/l 1607 10/30/92 0.029 EPA Method 8270-TCLP WJP TCLP Endrin (Reg. Limit 0.02) ND mg/L 1630 10/26/92 0.00035 EPA Method 8080-TCLP KΒ



Analytical Chemistry • Utility Operations

11/05/92

222897 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Heptachlor (Limit .008)	ND	mg/l	1630 10/26/92	0.00018	EPA Method 8080-TCLP	KB
TCLP Heptachlor Epoxide (.008)	ND	mg/l	1630 10/26/92	0.0049	EPA Method 8080-TCLP	KB
TCLP Hexachlorobenzene (.13)	ND	mg/l	1607 10/30/92	0.1	EPA Method 8270-TCLP	WJP
TCLP Hexachlorobutadiene (.5)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Hexachlorethane (Limit 3)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	ATA
TCLP Nitrobenzene (Limit 2)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	MTb
TCLP Pentachlorophenol (100)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Tetrachloroethylene (.7)	ND	mg/l	0725 10/30/92	0.005	EPA Method 8240-TCLP	PM
TCLP Toxaphene (Reg. Limit 0.5)	ND	mg/l	1630 10/26/92	0.014	EPA Method 8080-TCLP	KB
TCLP Trichloroethylene (.5)	ND	mg/l	0725 10/30/92	0.005	EPA Method 8240-TCLP	PM
TCLP 2,4,6-Trichlorophenol (2)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP Vinyl Chloride (.2)	ND	mg/l	0725 10/30/92	0.01	EPA Method 8240-TCLP	PM
TCLP 2,4 D (Reg. Limit 10)	ND	mg/l	1430 10/27/92	0.071	EPA Method 8150-TCLP	KB
TCLP 2,4,5-Trichlorophenol (400)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	MIb
TCLP 2,4,5-TP (Silvex) (RL 1)	ND	mg/l	1430 10/27/92	0.01	EPA Method 8150-TCLP	КВ
TCLP Cresol (Reg. Limit 1)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
TCLP MEK (Reg. Limit 200)	13	mg/l	0725 10/30/92	0.05	EPA Method 8240-TCLP	PM
TCLP Methoxychlor (RL 10)	ND	mg/l	1630 10/26/92	0.011	EPA Method 8080-TCLP	KB
TCLP Pyridine (Reg. Limit 5)	ND	mg/l	1607 10/30/92	0.029	EPA Method 8270-TCLP	WJP
Metals Digestion - TCLP 3010	Digested	a/s	2200 10/22/92		EPA Method 3010	KDC
Metals Digestion - 7470	Digested	a/s	0830 10/22/92			JHL
TCLP Silver (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Arsenic (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.2	EPA Method 6010	GDG
TCLP Barium (Reg. Limit 100.0)	ND	mg/l	1749 10/26/92	1.0	EPA Method 6010	GDG



Analytical Chemistry • Utility Operations

11/05/92

222897 Continued

Page 3

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
TCLP Cadmium (Reg. Limit 1.0)	ND	mg/l	1749 10/26/92	.01	EPA Method 6010	GDG
TCLP Chromium (Reg. Limit 5.0)	.03	mg/l	1749 10/26/92	.02	EPA Method 6010	GDG
TCLP Mercury (Reg. Limit 0.2)	ND	mg/l	1130 10/28/92	.001	EPA Method 7470	LW
TCLP Lead (Reg. Limit 5.0)	ND	mg/l	1749 10/26/92	.1	EPA Method 6010	GDG
TCLP Selenium (Reg. Limit 1.0)	ND	mg/l	0926 10/27/92	.2	EPA Method 6010	RJC

Quality Assurance for the SET with Sample 222897

Sample #	Description	Result	Units TCLP		Value Spk Conc. (Reg. Limit	Percent 5.0)	Time	Date	Ву
	Blank	<.01	mg/l		(***)	,	1749	10/26/92	GDG
	Standard	.20	mg/l	.20		100	1749	10/26/92	GDG
	Standard	.99	mg/l	1.0		101	1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0		100	1749	10/26/92	GDG
	Standard	2.1	mg/l	2.0		105	1749	10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100	1749	10/26/92	GDG
222697	Spike		mg/l		1.0	98	1749	10/26/92	GDG
222699	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222701	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222703	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222711	Spike		mg/l		1.0	99	1749	10/26/92	GDG
222768	Spike		mg/l		1.0	97	1749	10/26/92	GDG
222816	Spike		mg/l		1.0	95	1749	10/26/92	GDG
			TCLP 2	Arsenic	(Reg. Limit	5.0)			
	Blank	<.2	mg/l				1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0		100	1749	10/26/92	GDG
	Standard	5.1	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	9.9	mg/l	10		101	1749	10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100	1749	10/26/92	GDG
222697	Spike		mg/l		5.0	102	1749	10/26/92	GDG
222699	Spike		mg/l		5.0	99	1749	10/26/92	GDG
222701	Spike		mg/l		5.0	103	1749	10/26/92	GDG
222703	Spike		mg/l		5.0	101	1749	10/26/92	GDG
222711	Spike		mg/l		5.0	104	1749	10/26/92	GDG
222768	Spike		mg/l		5.0	101	1749	10/26/92	GDG
222816	Spike		mg/l		5.0	103	1749	10/26/92	GDG
			TCLP 1	Barium ((Reg. Limit :	100.0)			
	Blank	<1.0	mg/l				1749	10/26/92	GDG
	Standard	1.0	mg/l	1.0	,	100	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0	•	102	1749	10/26/92	GDG
	Standard	10	mg/l	10		100	1749	10/26/92	GDG

Continued



Analytical Chemistry • Utility Operations

222897 Continued

Page 4

Sample #	Description	Result		·	/alue Spk	Conc.	Percent	Time	Date	Ву
222697	Duplicate	ND	mg/l	ND			100	1749	10/26/92	GD
222697	Spike		mg/l		5.0		97	1749	10/26/92	GD
222699	Spike		mg/l		5.0		93	1749	10/26/92	GD
222701	Spike		mg/l		5.0		94	1749	10/26/92	GD
222703	Spike		mg/l		5.0		91	1749	10/26/92	GD
222711	Spike		mg/l		5.0		98	1749	10/26/92	GD
222768	Spike		mg/l		5.0		98	1749	10/26/92	GD GD
222816	Spike		mg/l	0-4-1·-	5.0		100	1749	10/26/92	GD
		•		Cadmium	(Reg.	TIMIT	1.0)	47/0	10/24/02	CD
	Blank	<.01	mg/l	50			100	1749	10/26/92	GD:
	Standard	.50	mg/l	.50			100	1749	10/26/92	GD: GD:
	Standard	.95	mg/l	1.0			105	1749 1749	10/26/92 10/26/92	GD:
	Standard	2.4	mg/l	2.5			104	1749	10/26/92	GD:
222/07	Standard	4.8	mg/l	5.0			104 100	1749	10/26/92	GD
222697	Duplicate	ND	mg/l	ND	4 0		89	1749	10/26/92	GD
222697	Spike		mg/l		1.0 1.0			1749	10/26/92	GD
222699	Spike		mg/l				91 91	1749	10/26/92	GD
222701	Spike		mg/l		1.0 1.0		90	1749	10/26/92	GD
222703	Spike Spike		mg/l		5.0		93	1749	10/26/92	GD
222711	Spike Spike		mg/l				95 96	1749	10/26/92	GD
222768 222816	Spike Spike		mg/l mg/l		1.0 1.0		90 92	1749	10/26/92	GD
222016	Spike			Chromium			t 5.0)	1777	10/20/72	GD.
	Blank	<.02	mg/l	CIII OMI um	(Acg.	21111	C 3.0,	1749	10/26/92	GD
	Standard	1.0	mg/l	1.0			100	1749	10/26/92	GD
	Standard	5.2	mg/l	5.0			104	1749	10/26/92	GD
	Standard	5.0	mg/l	5.0			100	1749	10/26/92	GD
	Standard	9.8	mg/l	10			102	1749	10/26/92	GD
222697	Duplicate	ND	mg/l	ND			100	1749	10/26/92	GD
222697	Spike	ND	mg/l	NO.	1.0		99	1749	10/26/92	GD
222699	Spike		mg/l		5.0		98	1749	10/26/92	GD
222701	Spike		mg/l		5.0		98	1749	10/26/92	GD
222703	Spike		mg/l		5.0		97	1749	10/26/92	GD
222711	Spike		mg/l		5.0		100	1749	10/26/92	GD
222768	Spike		mg/l		5.0		101	1749	10/26/92	GD
222816	Spike		mg/l		5.0		99	1749	10/26/92	GD
2223.0	ортко			Mercury					,,	
	Blank	.01	mg/l	_	,,.		,	1130	10/28/92	LW
	Blank	.002	mg/l					1130	10/28/92	LW
	Standard	.010	mg/l	.010			100	1130	10/28/92	LW
	Standard	.011	mg/l				110	1130	10/28/92	LW
	Standard	.010	mg/l	.010			100	1130	10/28/92	LW
	Standard	.011	mg/l	.010			110	1130	10/28/92	LW
	Standard	.010	mg/l	.010			100	1130	10/28/92	LW
							and the second s			
	Standard	.010	mg/l	.010			100	1130	10/28/92	LW

Continued



Analytical Chemistry • Utility Operations

11/05/92

222897 Continued

Page 5

					· · · · · · · · · · · · · · · · · · ·				
Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
	Standard	.010	mg/l	.010		100	1130	10/28/92	LW
	Standard	.011	mg/l	.010		110	1130	10/28/92	LW
222416	Duplicate	ND	mg/l	ND		100	1130	10/28/92	LW
222768	Duplicate	ND	mg/l	.001		300	1130	10/28/92	LW
223604	Spike		mg/l		.010	81	1130	10/28/92	LW
223073	Spike		mg/l		.010	67	1130	10/28/92	-LW
223182	Spike		mg/l		.010	100	1130	10/28/92	LW
221766	Spike		mg/l		.010	86	1130	10/28/92	LW
222101	Spike		mg/l		.010	91	1130	10/28/92	LW
222102	Spike		mg/l		.010	99	1130	10/28/92	LW
222162	Spike		mg/l		.010	109	1130	10/28/92	LW
222416	Spike		mg/l		.010	98	1130	10/28/92	LW
222897	Spike		mg/l		.010	90	1130	10/28/92	LW
222104	Spike		mg/l		.010	95	1130	10/28/92	LW
222107	Spike		mg/l		.010	85	1130	10/28/92	LW
222108	Spike		mg/l		.010	74	1130	10/28/92	LW
222113	Spike		mg/l		.010	60	1130	10/28/92	LW
222115	Spike		mg/l		.010	68	1130	10/28/92	LW
222116	Spike		mg/l		.010	51	1130	10/28/92	LW
222117	Spike		mg/l		.010	97	1130	10/28/92	LW
222768	Spike		mg/l		.010	96	1130	10/28/92	ŁW
222816	Spike		mg/l		.010	84	1130	10/28/92	LW
			TCLP	Lead (Red	g. Limit	5.0)			
	Blank	<.1	mg/l				1749	10/26/92	GDG
	Standard	.99	mg/l	1.0		101	1749	10/26/92	GDG
	Standard	5.1	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	4.9	mg/l	5.0		102	1749	10/26/92	GDG
	Standard	10	mg/l	10		100	1749	10/26/92	GDG
222697	Duplicate	ND	mg/l	ND		100	1749	10/26/92	G D G
222697	Spike		mg/l		1.0	96	1749	10/26/92	GDG
222699	Spike		mg/l		5.0	95	1749	10/26/92	GDG
222701	Spike		mg/l		5.0	95	1749	10/26/92	GDG
222703	Spike		mg/l		5.0	96	1749	10/26/92	GDO
222711	Spike		mg/l		5.0	98	1749	10/26/92	GDG
222766	Spike		mg/l		5.0	96	1749	10/26/92	GDG
222768	Spike		mg/l		5.0	98	1749	10/26/92	GD 6
222816	Spike		mg/l		5.0	98	1749	10/26/92	GDG
			TCLP S	elenium (1	Reg. Limi	it 1.0)			
	Blank	<.2					0926	10/27/92	RJC
	Blank	<.1					0926	10/27/92	RJC
	Standard	.98		1.0		102	0926	10/27/92	RJO
	Standard	.99		1.0		101	0926	10/27/92	RJC
	Standard	4.9		5.0		102	0926	10/27/92	RJO
	Standard	4.3		5.0		115	0926	10/27/92	RJO
	Standard	.94		1.0		106	0926	10/27/92	RJO
222697	Duplicate	ND	mg/l	ND		100	0926	10/27/92	RJO

Continued



Analytical Chemistry • Utility Operations

11/05/92

222897 Continued

Page 6

Sample #	Description	Result	Units	Dup/Std Value	Spk Conc.	Percent	Time	Date	Ву
222697	Spike		mg/l	• •	1.0	98	0926	10/27/92	RJC
222699	Spike		mg/l		1.0	105	0926	10/27/92	RJC
222701	Spike		mg/l		1.0	105	0926	10/27/92	RJC
222702	Spike		mg/l		1.0	100	0926	10/27/92	RJC
222703	Spike		mg/l		1.0	99	0926	10/27/92	RJC
222711	Spike		mg/l		1.0	100	0926	10/27/92	RJC
222768	Spike		mg/l		1.0	99	0926	10/27/92	RJC
222816	Spike		mg/l		1.0	95	0926	10/27/92	RJC
222897	Spike		mg/l		1.0	89	0926	10/27/92	RJC

Reported results for TCLP analysis are corrected upward to reflect matrix spike recoveries.

I certify that the results were generated using the above specified methods.

APPENDIX P

ANALYTICAL RESULTS FROM LABORATORY AND EQUIPMENT BLANKS



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

GC Lab Blank 1

Collected By:

Date & Time Taken:

09/29/92 1130

Other Data: AFSCAPS Job # 5735, Tinker AFB

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 222088 Received: 09/30/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1719 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1719 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO ~
2-Chloroethylvinyl ether	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	û 0
Chloromethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

222088 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
trans-1,2-Dichloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1719 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1719 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1719 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

WTP-RB1

Collected By:

JPJ

Date & Time Taken:

09/26/92 1150

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221848 Received: 09/28/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Xylenes	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1644 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1644 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	СЭ
2-Chloroethylvinyl ether	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Chloroform	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO

Analytical Chemistry • Utility Operations

221848 Continued

Page 2

	D TOUT MC	UNITS	ANALYZED	EQL	METHOD	BY
PARAMETER trans-1,2-Dichloroethene	RESULTS ND	units ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1644 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1644 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1644 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

WTP-RB1

Collected By:

Date & Time Taken:

09/23/92 1650

Other Data: AFSCAPS Job #5735, Tinker AFB

Bottle Data: 2 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221724 Received: 09/25/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
Xylenes	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Acrolein	ND	ug/l	1535 10/27/92	100	EPA Method 8240	GO
Acrylonitrile	ND	ug/l	1535 10/27/92	100	EPA Method 8240	GO
Benzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromoform	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromomethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Carbon Tetrachloride	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Chlorobenzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Chloroethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GĐ
2-Chloroethylvinyl ether	ND	ug/l	1535 10/27/92	10	EPA Method 8240	ĢO
Chloroform	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Chloromethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Dibromochloromethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Bromodichloromethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,2-Dichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1-Dichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO



Analytical Chemistry • Utility Operations

221724 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	BY
trans-1,2-Dichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Dichlorodiflouromethane	ND	ug/l	1535 10/27/92	1.0	EPA Method 8240	GO
1,2-Dichloropropane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
cis-1,3-Dichloropropene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Ethyl benzene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Methylene Chloride	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,2,2-Tetrachloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Tetrachloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Toluene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,1-Trichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
1,1,2-Trichloroethane	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Trichloroethene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO
Trichlorofluoromethane	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
Vinyl Chloride	ND	ug/l	1535 10/27/92	10	EPA Method 8240	GO
trans-1,3-Dichloropropene	ND	ug/l	1535 10/27/92	5.0	EPA Method 8240	GO

I certify that the results were generated using the above specified methods.



Analytical Chemistry • Utility Operations

11/05/92

Applied Research Associates RR #1, Box 120-A Waterman Road South Royalton, VT 05068-Attention: Jack Jemsek

Sample Identification:

NTA-B05-B EB-Bailer

Collected By: JPJ

Date & Time Taken:

09/16/92 1520

Other Data: Tinker AFB

Bottle Data: 1 -- 40 ml Glass Vial (Zero Headspace) with a Teflon Lined Lid (04)

Lab Sample Number: 221087 Received: 09/18/92 Client: ARS1

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	ВУ
Xylenes	nd	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Acrolein	ND	ug/l	1254 09/25/92	100	EPA Method 8240	PM
Acrylonitrile	ND	ug/l	1254 09/25/92	100	EPA Method 8240	PM
Benzene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Bromoform	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Bromomethane	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
Carbon Tetrachloride	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	P M
Chlorobenzene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Chloroethane	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
2-Chloroethylvinyl ether	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
Chloroform	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Chloromethane	ND	ug/l	1254 09/25/92	10	EPA Method 8240	PM
Dibromochloromethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
Bromodichloromethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,1-Dichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,2-Dichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM
1,1-Dichloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PM



Analytical Chemistry • Utility Operations

221087 Continued

Page 2

PARAMETER	RESULTS	UNITS	ANALYZED	EQL	METHOD	B.
trans-1,2-Dichloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PI
Dichlorodiflouromethane	ND	ug/l	1254 09/25/92	1.0	EPA Method 8240	PI
1,2-Dichloropropane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	PI
cis-1,3-Dichloropropene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	Pi
Ethyl benzene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	P
Methylene Chloride	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	P
1,1,2,2-Tetrachloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	P
Tetrachloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	P
Toluene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	F
1,1,1-Trichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	F
1,1,2-Trichloroethane	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	f
Trichloroethene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	ı
Trichlorofluoromethane	ND	ug/l	1254 09/25/92	10	EPA Method 8240	F
Vinyl Chloride	ND	ug/l	1254 09/25/92	10	EPA Method 8240	F
trans-1,3-Dichloropropene	ND	ug/l	1254 09/25/92	5.0	EPA Method 8240	ı

I certify that the results were generated using the above specified methods.

APPENDIX Q

SAMPLE CHAIN OF CUSTODY FORMS

CONTACT: SACT JEMSEL

JOB NAME: AFSCAPS

, # Od JOB # 5435 LOCATION: Tinke AFB

RR #1, Box 120-A

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068

Waterman Road

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

SAMPLED BY: 383

Please send results to office circled above.

FAX: (802) 763-8283

(802) 763-8348

1) E	SAMIFLED BY: 313	7 7		LIEGSE	riease seno resi	results to office circled above.	e cil cie	anna					
										NV	ALYSE	ANALYSIS REQUESTED	REF NO
	LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLITYPE (V.N)	FILTERED (V/N)	PRESER. VATIVE	Okza	2528 2784 1.814	ع در 8	045	REMARKS
43		MA-64.551	7.6k/p	17:30	1,05	4 mi	ΝA	V∕V	/				
2		MTA-04-552	26/2/	3;00	50.1	10 ms	-	-	/				@15,31
		NTA-04-553	1.14.16	14:38	1.00	11 nx			7				
		NTA-04-55-432 1/2/12	21/4/1	M:30	56.1	14			/	V .	/ /		flow, D
		NTA-04-551	21/1/	c'2.7)	56.1	14	^	À	1	٧ /	/		
						-							
<u> </u>				•									
													
	b Bose/14	BOSE/NOUTRAL CNLY				Property of							
	1 HPLC	Les Undy Halphe	3	1- 4	2-1	rethyl waphtialope	Appe						
,	RELINQUISHED	RELINQUISHED BY: 42 1002	DÀTE:	TE: 31	F パケイ	TIME: TO RECEIVED BY:	RECEN	/ED BY:		Ret Office	, v	DATE: 1-92	9.2 TIME: C. 12.
	RELINQUISHED BY:	· BY:	DATE:	ij	-	TIME:	RECEIV	RECEIVED BY:				DATE:	TIME:
	RELINQUISHED BY:	BY:	DATE:	TE:	L	TIME:	RECEIV	RECEIVED BY:				DATE:	TIME:
	METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	RKS:					
4													

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

LOCATION: Tinker AFB JOB # 5935 PO #_

RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE

Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673 Suite A220

433

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283

SAMPLED BY:	215		Please send	- 4	results to office circled above.	ice circle	ed above					,		
									YNY	ANALYSIS REQUESTED	Requ	گران Equested	FIEL RI PA	REF NO
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLITYPE (Y/N)		PRESER.	04.75 1.81 Odars	1:81	٠ <u>٠</u>	T. INELL	//	•	REMARKS
	FPA-611A-551	00:F1 4/H/P	17:00	Lios	141	. • •		``	, ,	>	>		6140	61AX HON 0,5'
													4	to 1.0 '
2448	Kush	8240	*	378H										,
a CAS	CASE/WOUTCAL	out y												
7411 9	Welcher Da	1) 00/14/12/ Rave	Sout	11/1/10		2 - reductional	100	小机		7)(1)				
RELINQUISHED BY:		DATE:	FELL		TIME: 8:27 P	RECEIV	RECEIVED/BY:	C. A.C.	17/2	67.7		DATE:	11.92 TIME:	TIME: A . W.
RELINQUISHED BY:	BY:	DATE	نن	T	TIME:	RECEIV	/ED BY:	Ϊ,				DATE:	' }	TIME:
RELINQUISHED BY:	BY:	DATE:	نن	1	TIME:	RECEIV	RECEIVED BY:					DATE:		TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	PKS:							

Pape 242

CHAIN OF CUSTODY

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK TEMSER

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TINKUAFB

SAMPLED BY:

4300 San Mateo Blvd. NE Suite A220

(505) 883-3636

Albuquerque, New Mexico 87110

South Royalton, Vermont 05068

(802) 763-8348

RR #1, Box 120-A

Waterman Road

FAX: (802) 763-8283

FAX: (505) 883-3673

Please send results to office circled above.

Hot Foll 五 5 FIELD LOG BOOK EB-Sile REMARKS REF NO. PAGE(S) Dupliste ANALYSIS REQUESTED E423 102k 2011 13/8 OB ? PRESER. VATIVE CONTAINER FILTERED VOLTYPE (Y/N) FIELD 40m2 SAMPLE MATRIX विद्व 1520 TIME 15.33 DATE NTA-865-8 1/16 DENTIFICATION NTA - 808 FIELD NTA - BOS LAB NUMBER

ちら

18:00

NTA - Boss MAR- Cot

434

8:51

RELINQUISHED BY:	Peck Roman	$h^{DATE:}q/l$	192	IME: 8:50	TIME: 8, SO RECEIVED BY	In The	DATE: 9-18-02, 1	TIME: 9:60
RELINQUISHED BY:	0 0	DATE:	Ĭ.	TIME:	RECEIVED BY:		DATE:	TIME:
RELINQUISHED BY:		DATE:	IL.	TIME:	RECEIVED BY:		DATE:	TIME:
METHOD OF SHIPMENT:	IENT:				REMARKS:			

Acoudo sorple to small privarilize 8746, 418.1, 11820 STISSada fra

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: JACK JEMSEK

JOB NAME: AFSCAPS

JOB # 5735 PO #_

LOCATION: TENER AFB

SAMPLED BY: AN

4300 San Mateo Blvd. NE

RR #1, Box 120-A Waterman Road

Suite A220

South Royalton, Vermont 05068 Albuquerque, New Mexico 87110 (802) 763-8348 (505) 883-3636 FAX: (505) 883-3673

Please send results to office circled above.

FAX: (802) 763-8283

SAMIPLED BT:)		Liease	riease seno resuns		to office circled above	d above							
									CI GAY	ANALYSIS REQUESTED	UESTED	REF NO. PAGE(S)	00K	
LAB NUMBER	FIELD	DATE	TIME	SAMPLE MATRIX	CONTAINER I	FIELD FILTERED F	PRESER.	8/7 7/8.1	3/44	1:02k	Q.	REMARKS	S	
43	FPA-11-553	54/6	24:21	7.05	GOUTH		1	1	<u> </u>			H. 16 (0)	" HoT"	JA4.
5	FA-13-43 9115		M:45	11	וו	•	-	^	/	<i>></i>		(0) 151		
	FA-12-552 1/15 10:15	1115	10:15	ų	1)			1/	`	7		10/10/		
	NTA-816-551 9114	9117	A. 10	50.1	14			1	2	7		1214		
	MTA-842-551 9/17	4117	16:15	"				7	1	7		12-141		
	WA-862-551 9/14		12:20	3 \	11			V V	7	7		B-41		
	MTA - 646 -551 9/17			, J.	ी ज्या १			\ \	>	7		17.17 Hor	Hot . Fuel a. 1(Fc)	/(Fc)
	NTA - RAG-551 914		11:00	- ii	77 11 1	₩ ₹(n)		ر م	1	2		1 1		.
	NTA- 505-54 9/17		(2:30	در	,	,		1	1	1/		13-141 H	Het	
	NTA-608-551 91.7	411/6	17:ND	1.	(CC+29) 11	₽		1	7	7		13.151 A	Art-Fo	
RELINQUISHED BY:	Jeck los		DATE: 9/18/92		TIME: 8:50	RECEIVED BY:	ED BY:	Jung	The	10	DATE:	9-18-90 TIME:	50	
RELINQUISHED BY	76 /a	M DATÉ:	Ē.	·	TIME:	RECEIVED BY	ED BY:		ķ.		DATE:	TIME:		
RELINQUISHED BÝ	D BÝ:	DATE:	ü	Ι.	TIME:	RECEIVED BY:	ED BY:				DATE:	TIME:		
METHOD OF SHIPMENT:	SHIPMENT:		J673	1878	13	REMARKS:	KS:							

2 Methyl DAPHTHOLEM HPLC = MODHTHALLE 1- NOTHISE 1987 - 8770 - BASE NEUTHLE, SPLIT WITH 11940

CONTROL OF THE PROPERTY OF THE PROPERTY OF THE CONTROL OF THE CONT

CONTACT: JOSE SENSER

JOB NAME: AFECRES THE RIP

JOB # 5435 PO #

LOCATION: Tite AFE CHO

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A
Waterman Road

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283

4300 San Mateo Blvd. NE

Suite A220 Albuquerque, New Mexico 87110

FAX: (505) 883-3673

(505) 883-3636

_Please send results to office circled above.

			20001	יכמים אכווסר הכמים	uits to office circled above.	רב כוורו	מחמש מב									
	•								Y	NALYS	IS RE	ANALYSIS REQUESTED			FIELD LOG BOOK REF NO. PAGE(S)	X II
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (Y/N)	FIELD FILTERED (Y/N)	PRESER. VATIVE	OF 58	1.31	324	1.557	X ≥ 9			REMARKS	
430	NTA-CH-SSI	81/13	11:30	3.6.4	+++	١	t	^	^	^				(3	(3.14"	
.,	XITA- 809-552 918	9118	(v:25"	ונ	, 11	American Property and Property	•	^	`	,	>			(3	(3-15	
	FPA. 63. 552 9/14	4/14	0.17	1.	(AVC Se.			>	*	Š	>	^	1) (A) (A)		1.4 1.00
	HIA - BU 1	7/18	00:11	Shem	ヤラシメノ			>	3							
	NTA-BUZ	845	17.00	11	٠,		ş	>	3							
	N.A - 619	21/6	12:00	•		ì	}	>	>							
-	NIA-BIL	4/18	C; 23	11	¥	ì	i,	>	3							
	WIA fac	q_{H}	B:w	¥	Ţ.	\	i	`>	,					Ϋ́	Sus early Fire I cit	10.1
·	NTA- 649		(17.75	,	7	المتتبه	,	>	2	<u> </u>						Т
											_			-		
RELINOUISHED BY:	P(V)	PATEIZ	F. 7/2	120	JIME: 8:8	RECEIN	RECEIVED BY:	1	1	17.7		DATE	H	277 9 7	TIME:	
RELINQUISHED BY	BY	DATE	نن		IME:	RECEIV	RECEIVED BY:					DATE	J		TIME:	
RELINQUISHED BY:	BY:	DATE:	نن	L	IME:	RECEIV	RECEIVED BY:					DATE			TIME:	
METHOD OF SHIPMENT:	HPMENT:					REMARKS:	PKS:									

The property vophilialeus, I-methyl Nophilhalak, 2 methyl pay lithakue Missiby 8276, 8740, 418.1, 426.1 573 Sucha. fra

436

かいから こうちょうけんけいと 内のかしいをある あるからない

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

JOB # 5135 PO #

LOCATION: Tinker AFB

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A
Waterman Road
South Royalton, Vermont 05068
(802) 763-8348

FAX: (802) 763-8283

4300 San Mateo Blvd. NE Suite A220 Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

Please send results to office circled above. SAMPLED BY: 3PT

437

SAIVIF LED BI)	r rease serio		ופשחונש נט טוווכפ טווכופת מטסעכי	בו בו	מם סיי						
								AN	TASE	S REQ	ANALYSIS REQUESTED	REF NOPAGE(S)
LAB NUMBER	FIELD DENTIFICATION DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLATYPE (V/N)	FIELD FILTERED (Y/N)	PRESER. VATIVE	ام الم الم	1.818	1.35k	1.22.	- '	REMARKS
	FPA-841-552 4/2 / 14:30	430	50,1	791	ì		٨		7	H		10-11
	FPA - B41-5519h=1/12	2 9:30	1.8	101	. 1	1	/	\ \ \	-	,		4-5" hat 4
	FIR- B32-553 4/12/12	7 16:00	50.1	164	i		\	7	,			,0/
	FPA - 832 - 551 412190 15:50	4 15:50	"	140 mg				7				Ø 1'
	FM - B32 - 582 1/1/1/1/15:50	as:51	,,,	1 11		,		7				6 61
	1911 - B32 - SSA Marky 11:20	c #: 20	•	1, 1				1				12-1-10141
	[M-631-85 9/2016 16:00	co. 3/ 7	ij	1 1,								ext 19-221
	FPA-1857-556 4914,116:30	06:30	11	1 11				1				17-241
	FPA - 832. 559 Theter 19:00	2 17:10	11	1 0				/				10,201
										_		
RELINQUISHED BY:	Ade Johnson	DATE:	1 66/26	TIME:	RECEI	RECEIVED BY:	60%	100	13	1	DATE: (7-)	DATE: 9-13-92 TIME: 8.5
RELINQUISHED BY:	0	DATE:		TIME:	RECE	RECEIVED BY:	<u>.</u>		†		DATE:	TIME:
RELINQUISHED BY:		DATE:	-	TIME:	RECEI	RECEIVED BY:					DATE:	TIME:
METHOD OF SHIPMENT:	HIPMENT:				REMARKS:	RKS:						
						-						

9 Daph Hower, I me not thatever, 2 me not introduced to base / worked ONLY

S75Nada, fra

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK JEMSEK

JOB NAME: AFSCAPS

LOCATION: TINKED AFP. OK JOB # 5435 PO #_

4300 San Mateo Blvd. NE Suite A220

RR #1, Box 120-A

Waterman Road

Albuquerque, New Mexico 87110 (505) 883-3636 South Royalton, Vermont 05068

FAX: (505) 883-3673

FAX: (802) 763-8283

(802) 763-8348

CASE/NOUTEAR GULD	REF NO	REMARKS	1918)	PI B	(3) 16.1						
(DE)	ANALYSIŞ REQUESTED										_
	ys. 1	1:2	/	2	1	ļ	_	\vdash		_	
	ANA	16/21	1	>	2				_	\vdash	_
•		1.55P								\vdash	_
ed above		PRESER. VATIVE									
fice circl		CONTAINER FILTERED VOLTYPE (Y/N)									
results to office circled above.		CONTAINER VOL/TYPE	43)	1,4	12	•					
8 9		SAMPLE MATRIX	1.05	50:1	50:1						
Please send		TIME	(a:51	15:30 5.21	\$2:91						1
		DATE	914/12	13							
202		FIELD IDENTIFICATION	WTP-B01-51 9/14/12 15:00 500	11-13-202 -31- n	wTP-643-551						
SAMPLED BY:		LAB NUMBER									

438

TIME

DATE:

RECEIVED BY:

TIME: 8:10

DATE: 9/25/92

James !

RELINQUISHED BY: AC

RELINQUISHED BY:

RELINQUISHED BY:

(b 2N AS

T. Meha15 = CA CC 189

RECEIVED BY:

TIME

DATE:

DATE:

TIME

TIME:

DATE:

RECEIVED BY:

TIME:

DATE:

REMARKS:

METHOD OF SHIPMENT:

CONTACT: SACK JEMSER

JOB NAME: AFSCAPS

JOB # 5435 PO #

LOCATION: Tinker AFB, OK

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A
Waterman Road
South Royalton, Vermont 05068
(802) 763-8348
FAX: (802) 763-8283

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

Please send results to office circled above.	
Please	
727	
SAMPLED BY:	

<i>)</i>	יום חשו וייורט			ו ובמפב פבוות	- 1	בסתונס בחונסם מחומם	2							
•										ANALYS	ANALYSIS REQUESTED	ESTED	u,	FIELD LOG BOOK REP NO. PAGE(S)
	LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE	FIELD CONTAINER FILTERED VOLTYPE (V/N)	FIELD FILTERED (Y/N)	PRESER.	_y ≤9	1.818				REMARKS
43		FPA-01	9/24/12/30	8:30	mote	2 Vials	4	1	1					
9		FPA 824	Ł.	9.20		11	-		\dagger					
		TPA - 631	•	9:40	נו	1,			3				17,	14 SP45
		FPA - 832	ı	9:20	11	11			_					•
		10A-133	1,	9:10	u	11								
		FOA - R41	Ų	10:00	7	n								
		FOA - 845	11	8 :50	¥	11				7				
		wip- Rei	refe	6:50	W	, v			7					
	RELINQUISHED BY:	BY: JACK CARRE		DATE: 9/25/92	1	TIME: 8:10		RECEIVED BY: \(\)	110	2 SAMI		DATE: 75-92 TIME:	4-92	TIME: 8:15
	RELINQUISHED BY:	BY: U U	DATE	TE: 1	ł	TIME:		RECEIVED BY:		Á	_	DATE:		TIME:
	RELINQUISHED BY:	BY:	DATE	TE:	1	TIME:	RECEIN	RECEIVED BY:			-	DATE:		TIME:
	METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	PKS:						
ك														

ing.

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

JOB # 5935 PO #_

LOCATION: Tiwker AFB DK

APPLIED RESEARCH ASSOCIATES, INC.

/ RR #1, Box 120-A
Waterman Road
South Royalton, Vermont 05068

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

SAMPLED BY: 20-5

FAX: (802) 763-8283

(802) 763-8348

Please send results to office circled above.

CASE/NEWRA CALL

טאואור בבט פו	2 17-		riease sena	_	esuits to office circled above	ice circie	d above					,	としていく	
									Ž	VLYSE	S REO	ANALYSIS REOUESTED		FIELD LOG BOOK REF NO.
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE	CONTAINER	FIELD FILTERED (YN)	PRESER.	الاً الاً الاً الاً الاً الاً الاً الاً	1.817	7.55.V	1:00 to 8	933 ₁		REMARKS
44	FOR-641-55 Phospy 11:15	Mester	11:15	<u> 1.05</u>	1 at	1	١		ļ	1				,1(0)
0	vi	II.	=	1	10,01	i	١	>			-			(6)1,
	FPA-831-551	,,	(2:20	7	141	١	ı		<i>></i>	孩	>			2.5-3.5
	11	1.1	11	ú	10101	ì	ı	>			-			7.5-351
	FOR-831-552	11	05:11	£	702						_			, 2
	FPA-831-553	ĭ	02:21	4	126				7	1 147	>			15.8
	17	11	١	ĵ,	10, v)			>						8-41
	FON - B31-554	¥	13:0s	ï	N. A			ļ	5		_	,		,118
	FPA - B31-554A	¥	13:44	11	141				>	7	Ļ			Ø 13'
	FOR- B31-554A	1,	.1	1	100			>			_			131
RELINQUISHED BY:	BY: Jode What		DATE: 9/25/92	i	TIME: 8:10	RECEIVED BY	ED BY:	7	1/2	J.	,	DATE:	75-07	TIME:
RELINQUISHED BY:	BY: <i>U</i>	DATE:	,ii		TIME:	RECEIVED BY:	ED BY:		!			DATE:		TIME:
RELINQUISHED BY:	BY:	DATE:	ü		TIME:	RECEIVED BY:	ED BY:					DATE:		TIME:
METHOD OF SHIPMENT:	IIPMENT:					REMARKS:	KS:							

2 Me Day 11 the law HPLC = Nophithylane, I nemophistolow 573 Sada fra

440

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SACK JEMSEK JOB NAME: AFSCAPS JOB # 5435 PO #.

LOCATION: TINKE AFE, OK

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283 RR #1, Box 120-A Waterman Road

Albuquerque, New Mexico 87110 (505) 883-3636 4300 San Mateo Blvd. NE Suite A220

FAX: (505) 883-3673

STO
DOUTPAL
3775

	101		ل			1						~	9	523
SAMPLED BY:	515		Please send	Į.	results to office circled above.	ce circle	d above	_				15/1/4	DOUR	ISANE/DOUBLE CHES
									ANA	ANALYSIS REQUESTED	REQUI	şsted	EM.	REL D LOG BOOK REF NO
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER VOL/TYPE	FIELD (Y/N)	PRESER.	7478	1.317	1:0:1	0628	023/		REMARKS
44	FTA-831-565	9h492 17:40	17:40	50.	10.01	-	`						1916	/
1	1 1A= 1831-556		13:20	=	٧.	•							1610	1
	FA- 633-551	1	C0;9	U	11			٠,					1100	
	FTA- B33-552	JA .	16:10	ï	¥				7				63.5	٤,
	FPA- B33- 553	11	92:3	ú	164				7	1	>		1-8,	,
	FPA-833-54	ų	4:20		10			7	77 198	\$	\$		1986	,0
	FGA-B33 - 555	ي	16:A0	ĸ	2 viols				7				1818	18
	FM-R33-556	11	k:45	1,	Ireal		`		>				19-22	221
·	FA-833-554	11	16:20	1,	lat				>			<u> </u>		
					2									
RELINQUISHED	RELINQUISHED BY: 304 ONSA	DAT	DATE: 9/25/	192	TIME: 8:10		RECEIVED BY	1	CA	1070	7	DATE 9- 3	-76-92	TIME:
RELINQUISHED BY:	· ΒΥ: 🕴 ο	DATE	Ę. ,		TIME:		RECEIVED BY:				_	DATE:		TIME:
RELINQUISHED BY:	BY:	DATE:	ننز		TIME:	RECEIVED BY:	ED BY:				-	DATE:		TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	KS:					:		

HPLC: Northholene, 1 the Monthfollow, 2 the Northbolene TCLP = metals, 10104iles, Senivoloxiles STJSteffe. fra

441

CONTACT: TACK JEMSEK

JOB NAME: AFSCAPS

JOB # 5935 PO #_

LOCATION: TINLUAFE OK

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A Waterman Road

0-A 4300 San Mateo Blvd. NE ad Suite A220

South Royalton, Vermont 05068 Albuquerque, New Mexico 87110 (802) 763-8348

(505) 883-3636 FAX: (505) 883-3673

SAMPLED BY: STT

Please send results to office circled above.

FAX: (802) 763-8283

										1.8%	ANALYSIS REQUESTED	EQUEST	a	E	REF NO
	LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (Y/N)	FIELD FILTERED (Y/N)	PRESER	OF53	HUL					REMARKS
442		F711-13014-551		9749 16:46) ''5	10,01			٨					1.1.5	15
<u> </u>		FTA-141-552	ĭ	17:00	1 1	.,			٨					3.2	3.75-4.01
1		FTA- 841-553	11 0	17:00	Į.	1.			>					1-1	
	•	FW - Cat 54	1		1.1										
		FTA - 641 - Sis	,,	18:00	٨	3			>					15.	9.5-10.0'
		rid - 641 - W	Ţ	9 %		20,01	J.	6.3	>	>					五
	-														
RE	RELINQUISHED BY:	BY: JOA JOHNA		DA/Eig/92		TIME: X:40	RECE	RECEIVED BY:		0		DA	DATE: 20-02	00-	TIME:
품	RELINQUISHED BY:) BY: 0 0	PA	DATE:		TIME:	RECE	RECEIVED BY:		-		DATÉ:	ü	1	TIME:
뿝	RELINQUISHED BY:) BY:	DA	DATE:		TIME:	RECEI	RECEIVED BY:				DATE	ننا		TIME:
Ž	METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	IRKS:					:		

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068 CONTACT: JACK SEMSEK LOCATION: TIMES AFB JOB # 5435 PO #_ JOB NAME: AFSCA(05

4300 San Mateo Blvd. NE Suite A220

RR #1, Box 120-A

Waterman Road

Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

Metals, Voldiles, seni-Mols

FAX: (802) 763-8283

(802) 763-8348

SAMPLED BY:	3/5		Please ser	send res	nd results to office circled above.	se circle	d above.				-	. 1	^	
									ANALY	(SIS RE	ANALYSIS REQUESTED	0	FTE. B	RELD LOG BOOK REF NO. PAGE(S)
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER F	FIELD FILTERED (V/N)	PRESER.	425 1.05 1 1.05	1.05k	* Ot 28	ردده			REMARES
	11 TP. PUM-551 9/15/92 10:15	26/51/6	21:01	1.05	194	1	•	<i>^</i>	/	1/			(A) (A)	9 to 16
2	WTP-805-551	1	11:22	١,	3			7	<i>'</i>	2			0	6 4 th
	WTP - BUG - SCI	.1	11:40	וו	٨			>	۱ (7			13-19'	q ′
	WTP-B@7-551	3	13:00	¥	11			•	7	2			(d) 16'	
	WTP-808-551	'n	16: to	11	ч			1	7	>			Q 16	
	wrp-61	11	16:14	11	1,3						7		LITO-	WITD-1345 1961 PLT
													ડ	CONUNE 14-17
				-		1	-						2	
140 T X	Total Metals=	<u>ਨ</u>	Cr	Pa Ph	2N AS 14, V.	A, Vr								
VK AA	,	47110				,								
NOUIS	at well	DA	DATE: 9-73-92		TIME: 8:40	ľ	RECEIVED, BY:	1078/	96	3	PAO	DATE: Q. 00		TIME:
RELINQUISHED BY:	BY: ()	DATE:	TE:		TIME:	RECEÍVED	VĚĎ BY:	211			DAT	S K		TIMÉ
RELINQUISHED BY:	BY:	DATE	TE:		TIME:	RECEI	RECEIVED BY:				DATE:	نن	-	TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	RKS:							

443

CONTACT: SACK SER

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TINKU PEB

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068 FAX: (802) 763-8283 RR #1, Box 120-A (802) 763-8348 Waterman Road

4300 San Mateo Blvd. NE

Albuquerque, New Mexico 87110 (505) 883-3636 Suite A220

FAX: (505) 883-3673

SAMPLED BY:	: 365		Please send	1 -	results to office circled above.	ice circle	d above	a;						
									ANA	ANALYSIS REQUESTED	REQU	ESTED		FREED LOG BOOK REF NO PAGE(S)
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLITYPE (Y/N)		PRESER. VATIVE	orza	1.81×	100	32/4	OSI		REMARKS
44	WTP-RES	118/92	as://	world	10:01	i	ı	>						
	FTA-841.551	9/2/1/2 11:10	11:10	5.	10+50	1	,	>	>		>		_	1-1.5
		=	G:00	7	1,	i	•	3	/	>	>			3.25-40' Det
	FTA-0401-553	ر ر	<u>1</u> 1;0	10	11	1	•	3	>		>			
	FTA - PW 1-554	×	17:50	11	1,	į	`	40,	1970. 1870	35.34		>		2.25-3.c Ht
	M-041-555	₹	18:00	h	11	ţ	,	<u> </u>	13	_	2			
								-	_		_			
										-				
·										 				
									-	-	_			
RELINQUISHED	RELINQUISHED BY: JACK JURGEL		DATE: 9/28/97		TIME:	RECEIV	RECEIVED BY:		196		,	DATE:	7. 93	TIME: C 21/ C
RELINQUISHED BY:	BY: ∤ ∂		Œ,		TIME:	RECEIVED BY	ED BY:					DATE	1	TIME:
RELINQUISHED BY:	BY:	DATE:	ë	_	TIME:	RECEIV	RECEIVED BY:					DATE:		TIME:
METHOD OF SHIPMENT:	HPMENT:					REMARKS:	KS:							

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: SAUL JEPUSEK

JOB NAME: AFSCANS

LOCATION: TIME AFR , JOB # 5/35 PO #_

445

4300 San Mateo Blvd. NE

Albuquerque, New Mexico 87110 FAX: (505) 883-3673 (505) 883-3636 Suite A220

South Royalton, Vermont 05068

(802) 763-8348

RR #1, Box 120-A

Waterman Road

FAX: (802) 763-8283

SAMPLED BY:	575		Please send		results to office circled above.	ce circle	d above						
		-						¥	ANA	LYSIS R	ANALYSIS REQUESTED		REP NO
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (V/N)	FIELD FILTERED (Y/N)	PRESER. VATIVE	od of	1.55 ×	1/2			REMARKS
	05C-BUJ-551 9/15/91		19:50	اند	14				/				,910
	05C-1807-551	-	(%; g)	11	, ,				/			<u>ම</u>	(g) 11,
	05c -C-01	9 /2 km 12:00	12,00	l,	ķ			^	,			2	0.1-0.5' WIFALL
	WTP- BOA - 551 9/15/41 10:25	9/15/91	10:25	ų	lviol			7		-		(d)	916
	10TP-846- SSI	., 11	11:40	11	11			^				<u>୬</u>	@ 13·14,
	WTP-1348-551	11	6:00	11	ų			^				(O)	,4/6)
	WIP- 646	9hr. HZ	11:603	woter	2 Vials			/					
	WTP - BAA		 10:35	11	2Vials			^					
\$ 10 P	Care hout I am	(400											
+ T. Metal	つ -	10	Ba	7	A. 116	Ŋì							
RELINQUISHED BY:	BY: Let low	2	,,	i :	TIME 9'40	RECEIN	RECEIVED BY:	12	1	00	DATE:	DATE: 9.2 9.2	TIME:
RELINQUISHED BY:	-		μï		TIME:	RECÉIN	RECÉIVED BY:				DATE:		TIME
RELINQUISHED BY:	BY:	DATE	ii نا	1	TIME:	RECEIN	RECEIVED BY:				DATE:		TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	PKS:						

APPLIED RESEARCH ASSOCIATES, INC.

LOCATION: TINKER AFB, OK CONTACT: JACK JEMYEK JOB # 5435 PO # JOB NAME: AFSCAPS

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283 RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE Suite A220 Albuquerque, New Mexico 87110 (505) 883-3636 FAX: (505) 883-3673

SAMPLED BY:	: 3Pz		Please send		results to office circled above.	ice circleo	l above.					TST /	PASE / DEUT PAL OUS	1 043
									ANA	ANALYSIS REQUESTED	REQUI	्र स्थाप्त	ž	REP NO.
LAB NUMBER	FIELD IDENTIFICATION	N DATE	TIME	SAMPLE MATRIX	CONTAINER	FILTERED (V/N)	PRESER.	ox 28	1,818	7561 7261	FW.	22/8		REMARKS
44	GC LAB - BLANK 1 17492 11:30 Water	1 9/29/92	11:30	water	2VIDS									
6	FTA-604-551	19/8/12	9/28/12:45	50, 1	1 at				/	<u> </u>			1-2	2,
	FTA " "	2	1	19	1 1.01			7					1-21	1 2
	FIA - BO4-552	11 2	12:50	11	1at			^	/ /	>			8-9	, l
	FTA "		ı,	44	10.0			7					16-8	14
	6FR-601-551	ı, İs	16:10	10	14				>		>	/	, h-9	, t
	OFB- 801-552	11 2	16:30	*	11				>		>	2	91-6	Q.
	OFB - B41-53	, S	16:40	4	16			_	>		>	>	11.1-91	141
	OFB " "1	7	16:40	Ŋ	10101			>					11.91	ئيد
	OFB-801-554	=	19:15	4	14				7	_	1	7	21-	71-22,
RELINQUISHED BY: ACL	BY: Back Onede		DATE: 0/92		TIME: 8:20	RECEIVED BY:	D BY:	13	P10.	•		DATE:	-34.97	TIME: 9:)
RELINQUISHED BY:	, BY: U /	DATE	TE:	L	TIME:	RECEIVED BY:	D BY:					DATE:	Y	TIME:
RELINQUISHED BY:	BY:	DA	DATE:	1	TIME:	RECEIVED BY:	D BY:					DATE:		TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	(S:							

" HPLC North Holeve, 1 Me North Holeve, 2 Me Wightholeve, 5 T. Metals Cd, Cr, Ba, Pb, ZN, As, Hg, N;

Service of the servic

LOCATION: TINKER AFB. OK CONTACT: JACK JEMSEK JOB # 5435 PO #. JOB NAME: AFSCAPS

APPLIED RESEARCH ASSOCIATES, INC. South Royalton, Vermont 05068 FAX: (802) 763-8283 RR #1, Box 120-A (802) 763-8348 Waterman Road

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 FAX: (505) 883-3673 (505) 883-3636

gase ventral outs

SAMPLED BY:			Please send	7-1	results to office circled above.	ice circle	d above	<u>ن</u>				K.As.	rent	Sase Vention Uning
									ANA	ANALYSIS REQUEST D	EQUE	STED		RELD LOG BOOK REP NO. PAGE(S)
LAB NUMBER	PIELD IDENTIFICATION	ON DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (Y.N)	FIELD FILTERED (Y/N)	PRESER.	OX/SP	1.818	<u></u>	John.	2/20 102		REMARES
44	OFB-642-552 9/18/12 18:00	152 9th 81997	∞:81 ≥	(?%)	14	-	1		7	Ļ	1	>		.21-11
7	OFB-802-554	11 1858	cE; 81	į.	194	-					*	7	,,,	22-23
	OFB "	W h	18:30	١,١	10,01	ı	-	^						72-231
	` .													
·														
RELINQUISHED BY:	OBY: Jack (Check	,	DATE: 9/30/92	-	TIME:	RECEI	RECEIVED BY:	100	7	100	د	DATE	50-02	
RELINQUISHED BY:) BY: 1 U	O,	√TE:	-	TIME:	RECEL	RECEÍVED BY:		1		٦	DATÉ:		TIME:
RELINQUISHED BY:) ВҮ:	Ď,	DATE:		TIME:	RECEI	RECEIVED BY:					DATE:		TIME:
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	RKS:							

T. Metals: Cd, Cr, Ba, Pb, Zw, As, Hg, Nr

Land Military and a copy of the

CONTACT: SACK SEMSEK

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TINKER LEB

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A Waterman Road

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

SAMPLED BY: 193

Please send results to office circled above.

NIKO L	SAIVIFEED DT.	277		riease	sena res	riease send results to ottice circled above.	ce circied	above.				
										ANALYSIS REQUESTED	EQUESTED	FIELD LOG BOOK REP NO PAGE(S)
		FIELD			SAMPLE	CONTAINER FILTERED		PRESER. PO	3			
S	LAB NUMBER	DENTIFICATION	DATE	TIME	MATRIX	VOLTYPE	(Y/N) V.	ATTVE S	1			REMARKS
448	7	020-237	9/01		wole	20105		^				
3		1F2-PZE	10/6		11	11		7	_			
		LF2-PZA	u		И	11		<u>></u>				
		FPA-11-551	1/12		So.)	Tube			>			01.51
$\overline{}$	4	F1A-47-551	9/21		11	٤			>			6 5.
7	F	FOA-41.552 9/21	9/21			¥			>			'o1 @
	<u>u_</u>	FPA-44-553 9/21	12/6		H	1,			3	,		151.0)
	440	FPA-04.551	1/12						>			, S (§
	1	F/A - 44 - 552	. "						>			,°0/ ©
	F	FPA - 44-553	1						>			(S)
RELI	RELINQUISHED BY:	34: Lode Gonad	DATE:	E: 1/4/92		TIME: 15:2	15:23 RECEIVED BY: (D BY:	173	{	DATE: 7	7 Oct 92 TIME: 1525
RELI	RELINQUISHED BY:	8Y: 0 0	DATE:	نن		TIME:	RECEIVED BY:	D BY:	-		DATE:	TIME:
RELI	RELINQUISHED BY:	١٧:	DATE	ننب	1	TIME:	RECEIVED BY:	D BY:			DATE:	TIME:
MET	METHOD OF SHIPMENT:	PMENT:					REMARKS:	S:				

CONTACT: SACK SEMSAL

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: CASSWELL AFB, TK

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068 (802) 763-8348 FAX: (802) 763-8283

4300 San Mateo Blvd. NE

Suite A220 Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

Please send results to office circled above. SAMPLED BY: WS

449

SAMIFLED BY: W.			Liease	sai puas aspar	esults to office circled above.	ce circieu	anna					
							7	****				PIELD LOG BOOK REF NO.
							•	ابد	ANALY	ANALYSIS REQUESTED	TED	PAGE(S)
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER P	FILTERED PR	PRESER.	مرح مرح م	3 E/4 1.8/4 0678			REMARKS
	155	85:51 76/5/	15:58	1,05	40ml			7	/			50.1 (305 Mix
	BSS-OS	14/192 17:00	12:00	1.05	1 to la			7	1/			4-81
		4592	9:50	sofon	16 ml			/				
	MU-2	10/5/92		1}	2			_				
		•										
		•										
RELINQUISHED BY:	BY: BOL Joheak	DAT	DATE: 14/92		TIME: 15:23	RECEIVED BY: DX.	D BX:	200	4	Δ	DATE: 704	704 92 TIME: 1523
RELINQUISHED BY:	BY: <i>∅</i>	DATE:	Ë		TIME:	RECEIVED BK	D BK	-		Q	DATE:	TIME:
RELINQUISHED BY:	BY:	DATE:	ü		TIME:	RECEIVED BY:	D BY:			Ò.	DATE:	TIME:
METHOD OF SHIPMENT:	HPMENT:					REMARKS:	S:					

HPCC. Doghthalowe + 2 Me Nogothalowal

573 Suda, fra

CONTACT: JACK JEMSEK JOB NAME: AFSCAPS

LOCATION: TIMES AFB OK JOB # 5435 PO #_

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068 RR #1, Box 120-A (802) 763-8348 Waterman Road

Albuquerque, New Mexico 87110 4300 San Mateo Blvd. NE (505) 883-3636 Suite A220

FAX: (505) 883-3673

SAMPLED RV. TPT

FAX: (802) 763-8283

SAMPI	SAMPLED BY:	37.3		Please	Please send res	sults to offi	sults to office circled above.	e.			
									ANALYSIS REQUESTED	(Q) UEQUESTED	FTELD LOG BOOK REP NO PAGE(S)
LABN	LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE	CONTAINER FILTERED VOLTYPE (Y/N)	FIELD FILTERED PRESER. (V/N) VATIVE	1:9/	/'0	Story.	REMARKS
450		FPA-13-551	126/51/6		1:05	1406					198
		FM-13-552	. 13		VI	11		_			,01@
		FPA-20-551 9/16/92	16/11/67		"	٠		>			150
		FPA-20-552	Ψ.		h	ų		>			/0/ @
		FOA - 20 - 553	и		Jı	ï		7			915/
		FPA-42-551	,		٧	11					75.6
		FPA-42-552	11		1,	11		<u> </u>			@ 1º'
		FPA-42-553	11			ž		7			/51 (6)
		FRA TAUL 10/1/92	10/4/02		Math	3 gt.				7	New RinsAPP
						>					
RELINO	UISHED	RELINQUISHED BY: ALL ONDOR	DATE:	E: 14/4/92		TIME: 15123	RECEIVED BY: (The second	1	DATE: 7	つかってIME:人名
RELINO	RELINQUISHED BY:	ву: ()	DATE:	L III		TIME:	RECEIVED BY:	_		DATE:	TIME:
RELINO	RELINQUISHED BY:	BY:	DATE	ننا	_	TIME:	RECEIVED BY:			DATE:	TIME:
МЕТНО	D OF SH	METHOD OF SHIPMENT:					REMARKS:				

(a) TCL/

metals, semivolatiles, volatiles

CONTACT: SACK JEMSOK

JOB NAME: AFSCAPS

JOB # 5435 PO #_

LOCATION: TiNKU AFB, OK

APPLIED RESEARCH ASSOCIATES, INC.

South Royalton, Vermont 05068 (802) 763-8348 RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE Suite A220

FAX: (505) 883-3673 (505) 883-3636

Albuquerque, New Mexico 87110

YOX

FAX: (802) 763-8283

SAMPLED BY:	1: 3/3		Please send		results to office circled above.	e circle	d above.				
								TVNY	ANALYSIS REQUESTED	Ð	FIELD LOG BOOK REF NO PAGE(S)
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE	CONTAINER FILTERED VOLATYPE (V/N)	MELD LTERED (V/N)	PRESER. VATIVE	131%			REMARKS
45	122-80-121	16/22/6		56:	1 466			\ \			153
l I	FPA-US. 552			t.	.,			>			@ lq
	FPA-05-553	, ,		te	1,			1			151
		14/11/4		١.				>			6 5
	FPA 03-553 9/11/9	9/11/9		٠,	,,			7			© 15 ¹
	FPA-11-552	19/15 Az		N.	ų			>			150
	FPA-11-554	ור		()	11			1			(0 15,
	FA-12-551	N		y	Ţ			7			051
	FPA-12-553	11		7	11			7			0151
RELINQUISHED BY:	D BY: Lode John	DATE:		194/92	TIME: 15:23	}	RECEIVED BY:	The	DATE	7	Odga TIME: 525
RELINQUISHED BY:) BY: () ()	DATE:		i	TIME:	RECEIN	RECEIVED BY:	/	DATE		TIME:
RELINQUISHED BY:) BY:	DATE:	iii		TIME:	RECEIN	RECEIVED BY:		DATE	نن	TIME:
METHOD OF SHIPMENT:	SHIPMENT:					REMARKS:	PKS:				7

CONTACT: SACK SEMSEL

JOB NAME: AFSCAPS

JOB # 5135 PO #_

LOCATION: TINKE AFB

SAMPLED BY: THT

APPLIED RESEARCH ASSOCIATES, INC.

RR #1, Box 120-A
Waterman Road
South Royalton, Vermont 05068
(802) 763-8348

FAX: (802) 763-8283

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

SAMPLED BY: 117	7 7 7		Please send		results to office circled above.	se circle	d above.				
								A	IALYSIS RI	ANAL.YSIS REQUESTED	REP NO
LAB NUMBER	FIELD DENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (Y/N)		PRESER.	1.81P	8073,		REMARKS
45:	1-msq	29/9/1	19/12 17:18	Soil	19,7	•	-	^	/		FPA Comp D1. 1.2.8
2	Dsw-2	٤	14:25	¥)			7			WTP/OSC COM
											Dr. 156
	NSW-3	1. h	19:25	r.	٠,٠			>	7		WT8/05C buns
	Dsw-4	B 41	17:30	7	*			^			FTA Com, DI 12
	DSW-5	÷	17:35	1.	•			7	7		OFB Comp Dr 152
							-				-
a mo	metalls, volatiles		And Semi vola	1.16							
RELINQUISHE	RELINQUISHED BY ACK POWER		DATE: 1/4/92		TIME: 8:25	RECEIV	RECEIVED BY: /	10/1	11/1/	DATE:	TIME CON
RELINQUISHED BY:	D BY:	DATE	نن		TIME:	RECEIVED BY:	ED BY:			DATE:	TIME:
RELINQUISHED BY:	D BY:	DATE:	نن		TIME:	RECEIV	RECEIVED BY:			DATE:	TIME:
METHOD OF SHIPMENT:	SHIPMENT:					REMARKS:	KS:				

The first of the control of the cont

APPLIED RESEARCH ASSOCIATES, INC.

The second secon

CONTACT: The Jensek

JOB NAME: AFSCAPS

JOB # 5435 PO # 54

LOCATION: T. WEW AFB. OK

RR #1, Box 120-A Waterman Road

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 South Royalton, Vermont 05068 (802) 763-8348

FAX: (505) 883-3673 (505) 883-3636

SAMPLED BY: IPS

453

Please send results to office circled above.

FAX: (802) 763-8283

SAMPLED BY: _ 3 F 3	727:		riease	sena res	Piease send results to office circled above	ice circie	above									e
									7	YALK.	ANAL FSIS REQUESTED	E P	(ED		REF NO	
LAB NUMBER	FIELD IDENTIFICATION	DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (V/N)	FIELD FILTERED (Y/N)	PRESER.	0478 28	1.811	1.05%	1.05.P 07.58 07.58	04.50	d73,		REMARES	
	OFB-\$3. 551	10/3/4		50.1	14.5			>	>	^	7	H			5-6.7'	
	OFB-64-552	10/3/92		11	011			1	7	7	<u></u>	_			5.6-4.4	
	128-04-551	1,		١,	N			^	1	7	2	7			4.0-5.6	
	LF2-10-552	142/92		11	W			/	>	7	7	7			,9't-9	
	152-07-56 162 11	11 75		ıı	บ			^	7	^	7	J			8 -11.6' COMP.	
	182.06- 551/552	1		u	11			٨	^	>	/	/			4.5-11.1 Comp.	
	Z55/195-50-Z4T	3		=	5			A	/	>	7	/			5-8.6' Como	
	•														b	
												H		\vdash		
RELINOUISHED BY:	BY: Jack Jours	DATE:		26/b/a	TIME: 8:24		RECEIVED BY	Cit's	Sell Cours	17.0	بلا	DA	DATE:	1-7	P-7-92 TIME: 9:75	,
RELINQUISHED BY:	-	DATE:	ü		TIME:	RECEIN	RECEIVED BY:					Ā	DATÉ:		TIME:	
RELINQUISHED BY:	BY:	DATE:	ننږ		TIME:	RECEIN	RECEIVED BY:					ă	DATE:		TIME:	··········
METHOD OF SHIPMENT:	HIPMENT:					REMARKS:	RKS:									
573.94da. fra	6 ca, cr, Ba, Pb, ZN, As, H 6 heatBase/Veut104 orly	, Ba, P ase /Ve	6, 2N	As, Hg	, N;											7

APPLIED RESEARCH ASSOCIATES, INC.

CONTACT: Spele Semsek JOB NAME: AFSCAPS JOB # 5435 PO #_

South Royalton, Vermont 05068 FAX: (802) 763-8283 RR #1, Box 120-A (802) 763-8348 Waterman Road

4300 San Mateo Blvd. NE Suite A220

Albuquerque, New Mexico 87110 (505) 883-3636

FAX: (505) 883-3673

Please send results to office circled above. SAMPLED BY:

454

LOCATION: TINKE AFB DK

SAMIFLED DT:	7		רוכמטר	משנות ופס	riease send results to utilice circieu above.	וכם כווכו	מחם חם						
									4	IALYS	G REQU	ANALYSÍĞ REÇÜĞESIĞI	REP NO
LAB NUMBER	FIELD IDENTIFICATION	N DATE	TIME	SAMPLE MATRIX	CONTAINER FILTERED VOLTYPE (Y/A)	FIELD FILTERED (Y/N)	PRESER. VATTVE	2×53	1:21	1.55	2F.28	الزيرك	REMARKS
	LFA-65-551 1011	1/0)		50,1	193.	Ì	1	7			7		3'-4.6'
	LF4-05-552 WZ	2 142		WASTE	101							7	6-4.6'
	LF4.06-551/50/600 10/2	10/2		11	0 2		٠, ١	^	>	>	7		2-9.6' como
	1F4-46-650 142	142		50.1	l,			^			\	-	12,-14.6"
	154-111-551	1.1		, 11			·	, J	7	7	7		8-9.6'
	1F4-06-W1 10/1	1/01/11		Wo fe	1 1/10			7					0.41
	1FA-06-W2	2 10/1		1	2 vials			7					Ø 15.<
-	1 F4-05-WI 10/1	1/0/1		11	==			7					1 p @
	LF2-PZC	146		1	1			>					
	LE2- P2D	10/6		v	11			Ż					
RELINQUISHED BY: Ade Johnst	BY: Jode Je	١,	DATE: 10/7	17/92	TIME: 15:23		RECEIVED BY		17	1		DATE: 7	70452 TIME: 152
RELINQUISHED BY:	BY: (0		DATE:		TIME:	ľ	RECEIVED BY:					DATE:	TIME:
RELINQUISHED BY:	BY:	DA	DATE:		TIME:	RECEI	RECEIVED BY:					DATE:	TIME:
METHOD OF SHIPMENT:	IIPMENT:					REMARKS:	RKS:						

STASselle, fra

CA, Cr, Ba, Pb, Zw, As, Hg, Vi BASE/NEUTKAL ONLY Metals, Volotiles, semi volotiles